

BLANK

DIGITAL EQUIPMENT CORPORATION PARTS LIST				QUANTITY / VARIATION												NOTES:			
MADE BY H. DARAKJIAN DATE 31 JAN 79		CHECKED D. HEALY DATE 26 DEC 79		SECTION 1		MS11-MA	MS11-MB	MS11-MC	MS11-MD									1. QTY OF 1 DEPENDING ON VARIATION USED (MS11-MA)	
ENG J. E. MANTON DATE 1-15-80		PROD B. SCHAAF DATE 1-15-80		ISSUED SECTION 1														2. QTY OF 1 DEPENDING ON VARIATION USED (MS11-MB)	
ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION															REF DESIGNATION	
1	K-PL-M8722-AA-DBP	M8722-AB	128K BYTES/MOSTEK 16K CHIPS	NOTE 1	-	-	-	-										NOTES: 3. A QTY OF 2 MS11-MB MODULES (SEE NOTE 2 FOR VARIATION) 4. A QTY OF 3 MS11-MB MODULES (SEE NOTE 2 FOR VARIATION)	
2	K-PL-M8722-AA-DBP	M8722-AC	128K BYTES/FUJITSU 16K CHIPS		-	-	-	-											
3	K-PL-M8722-AA-DBP	M8722-AF	128K BYTES/HITACHI 16K CHIPS		-	-	-	-											
4	K-PL-M8722-BA-DBP	M8722-BB	256K BYTES/MOSTEK 16K CHIPS		-	NOTE 2	NOTE 3	NOTE 4											
5	K-PL-M8722-BA-DBP	M8722-BC	256K BYTES/FUJITSU 16K CHIPS		-														
6	K-PL-M8722-BA-DBP	M8722-BF	256K BYTES/HITACHI 16K CHIPS		-														
7	B-PL-MS11-M		MS11-M SHIPPING LIST	1	1	1	1												
E.C.O. NO.																			
"THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 79 DIGITAL EQUIPMENT CORPORATION"				TITLE ECC MOS MEMORY (MS11-M)		ASSY NO. B-DD-MS11-M		SIZE B	CODE PL	NUMBER MS11-M-Ø		REV. A							
						SHEET 1 OF 1		INSERTION PARTS LIST DATA BASE REV											

THIS DRAWING AND SPECIFICATIONS HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION

COPYRIGHT © 1978 DIGITAL EQUIPMENT CORPORATION

MODIFIED HAMMING CODE MATRIX

	BYTE 0							BYTE 1							BYTE 2							BYTE 3							CHECK BITS											
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	C ₁	C ₂	C ₄	C ₈	C ₁₆	C ₃₂	C _T	
S ₁	X			X		X		X		X		X		X		X	X	X		X		X		X	X	X		X		X		X								
S ₂			X	X			X	X			X	X			X	X		X	X			X	X			X	X			X		X		X						
S ₄					X	X	X	X					X	X	X	X				X	X	X	X					X	X	X				X						
S ₈	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X									X	X	X	X	X	X	X	X			X					
S ₁₆	X	X	X	X	X	X	X	X									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X					
S ₃₂									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X				
ST	X			X		X	X		X			X	X	X			X		X	X	X				X	X		X										X		

EACH CHECK BIT IS THE RESULT OF ODD PARITY GENERATED ON THE DATA BITS DESIGNATED BY X. I.E. C₁ IS $\sum (1,3,5,7,9, \dots, 29,31)$. C₃₂ IS $\sum (8 \text{ THRU } 31)$. THE EXCEPTION IS C_T, WHICH IS THE RESULT OF EVEN PARITY.

- SYNDROME BITS (S₁ ETC.) ARE FORMED BY A COMPARISON OF THE CHECK BITS READ FROM MEMORY AND THE NEW CHECK BITS GENERATED ON THE DATA READ FROM MEMORY.
- A SINGLE ERROR WILL CAUSE AN ODD NUMBER OF SYNDROME BITS TO GO HIGH

E.G. IF BIT 1 FAILS S₁, S₈ & S₁₆ WILL GO HIGH.

IF BIT 15 FAILS S₁, S₂, S₄, S₈ & S₃₂ WILL GO HIGH.

A DOUBLE ERROR WILL CAUSE AN EVEN NUMBER OF SYNDROME BITS TO GO HIGH.

E.G. IF BITS 0 & 1 FAIL S₁ & S_T WILL GO HIGH; BUT S₈ & S₁₆ WILL NOT SINCE C₈ & C₁₆ ARE COMMON TO BITS 0 & 1 AND THE PARITY REMAINS UNCHANGED.

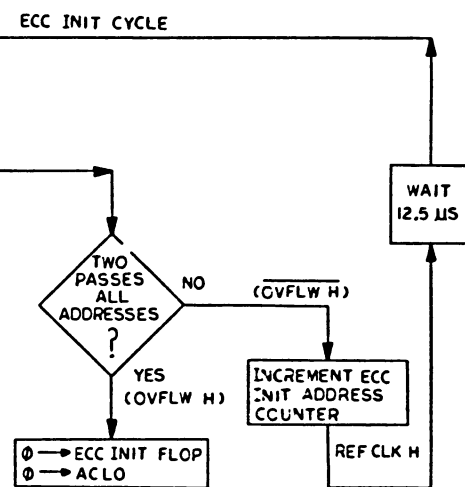
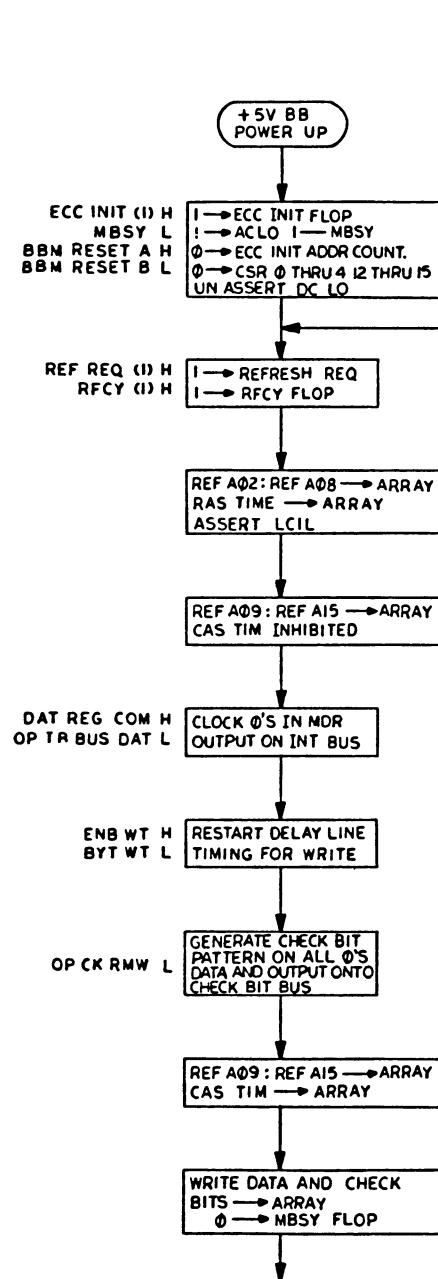
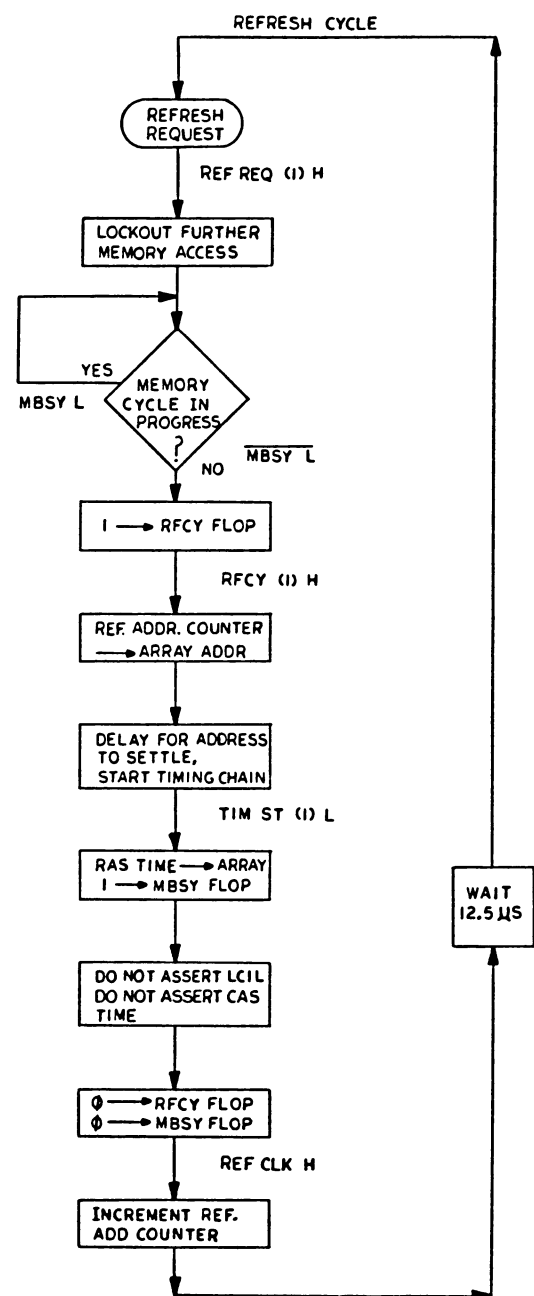


REVISIONS	CHANGE NO.	REV.	INT. RELEASE
CHK	1	A	

DRB 100A

QUANTITY & VARIATION	DESCRIPTION	DWG./PART NO.	ITEM NO.
THIRD ANGLE PROJECTION	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
REMOVE BURRS AND BREAK SHARP CORNERS	ANGLES ±0.30°		
DO NOT SCALE DWG	SURFACE QUALITY IN MICROINCHES		
MATERIAL	CLASS OF ACCURACY (CHECK ONE)		
FINISH	MEDIUM <input type="checkbox"/> ±.004 ±.008 ±.012 ±.016 ±.024 ±.04		
	PREFERRED <input type="checkbox"/> ±.012 ±.016 ±.025 ±.04 ±.063 ±.01		
	DRN. <i>Pegannon</i> 12-22-78	FIRST USED ON	11/44 digital
	CHK'D <i>Pegannon</i> 12-20-79		
	ENG. <i>J.B. Martin</i> 12-14-79		
	PRO. ENG. <i>J.B. Martin</i> 12-14-79		
	PROD. <i>B. Schaff</i> 1/9/80		
	NEXT HIGHER ASSY.		
	B-DD-MSII-M		
	SCALE		
	SHEET 1 OF 1		
	SIZE CODE	NUMBER	REV.
	B BS	MSII-M-7	A
	DIST.		

THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION.
COPYRIGHT © 1978, DIGITAL EQUIPMENT CORPORATION

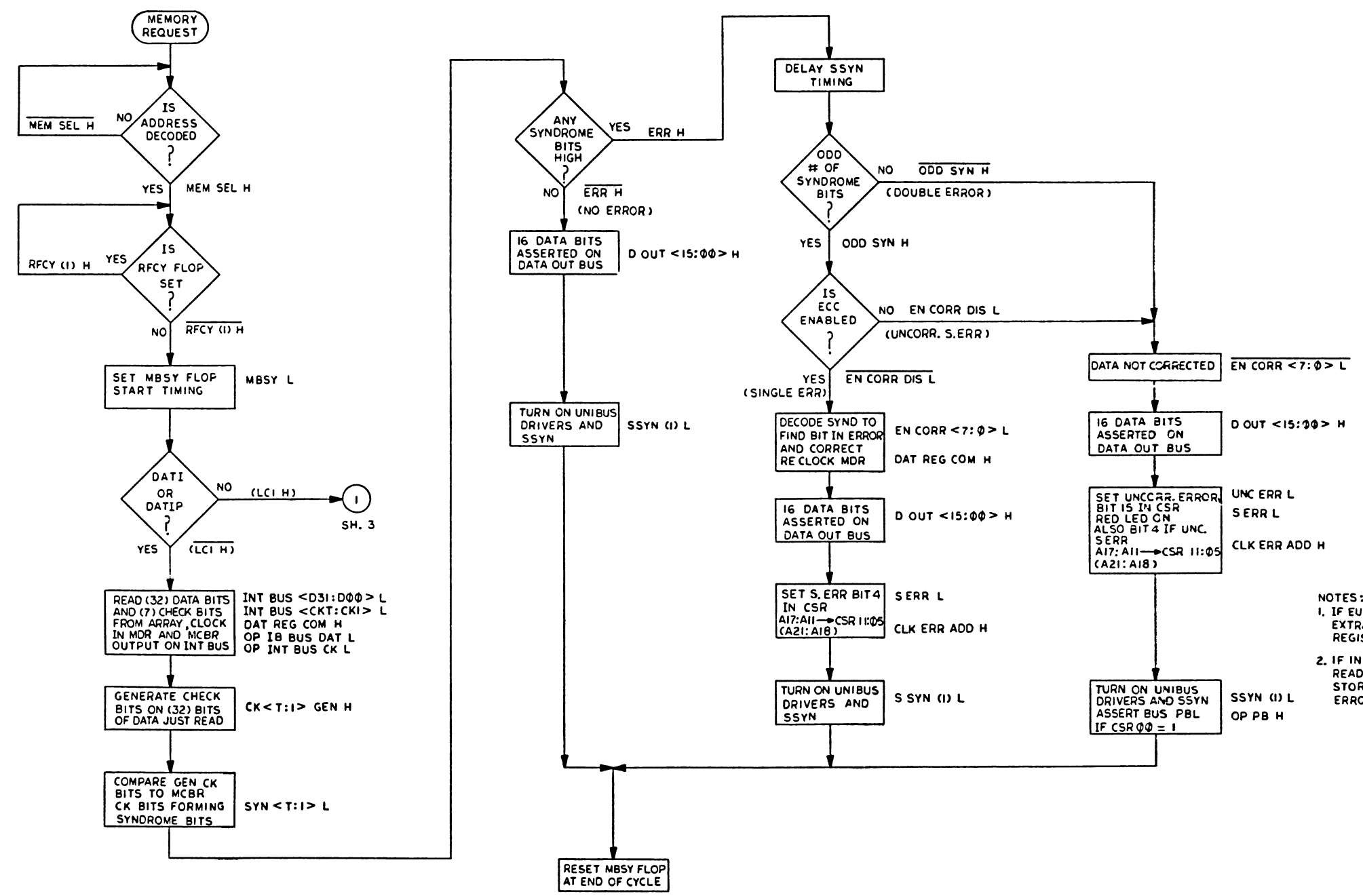


REV.	INT. RELEASE
1	

DRN. <i>[Signature]</i>	12-27-78	FIRST USED ON	11/44
CHK'D <i>[Signature]</i>	12-19-78	TITLE	MS11-M
ENG. <i>[Signature]</i>	12-12-78		FLOW DIAGRAM
PROD. ENG. <i>[Signature]</i>	12-12-78		
PROD. <i>[Signature]</i>	12-12-78		
NEXT HIGHER ASSY.			
B-DD-MS11-M	SIZE CODE	NUMBER	REV. A
SCALE	D	FD MS11-M-3	
SHEET 1	OF 4	DIST.	

THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1978 DIGITAL EQUIPMENT CORPORATION

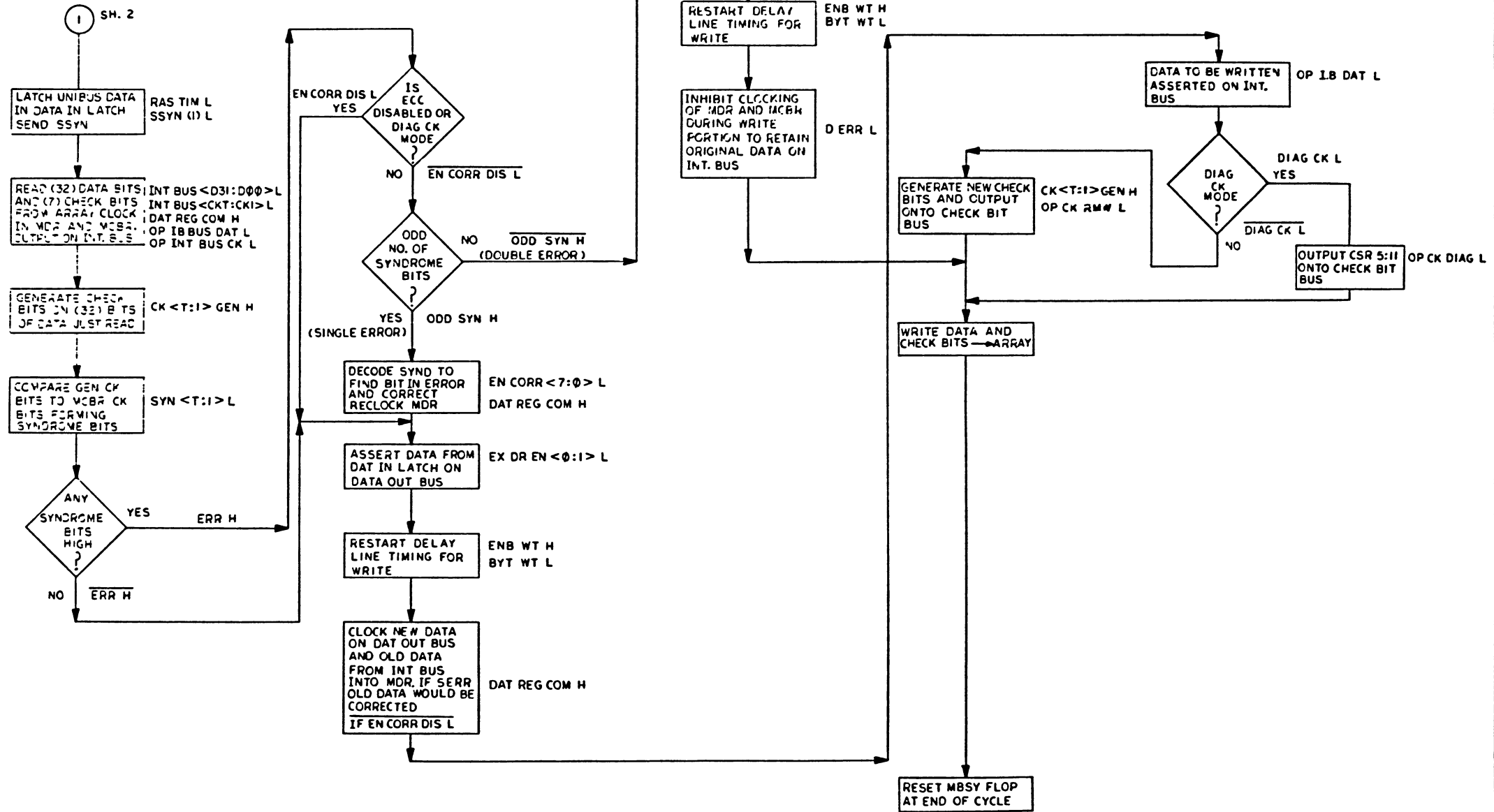
3-W-115W 2



REVISIONS		
CHK	CHANGE NO.	REV.

THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION.
COPYRIGHT © 1978 DIGITAL EQUIPMENT CORPORATION

Σ-W-11SW 2



MSII-M-3

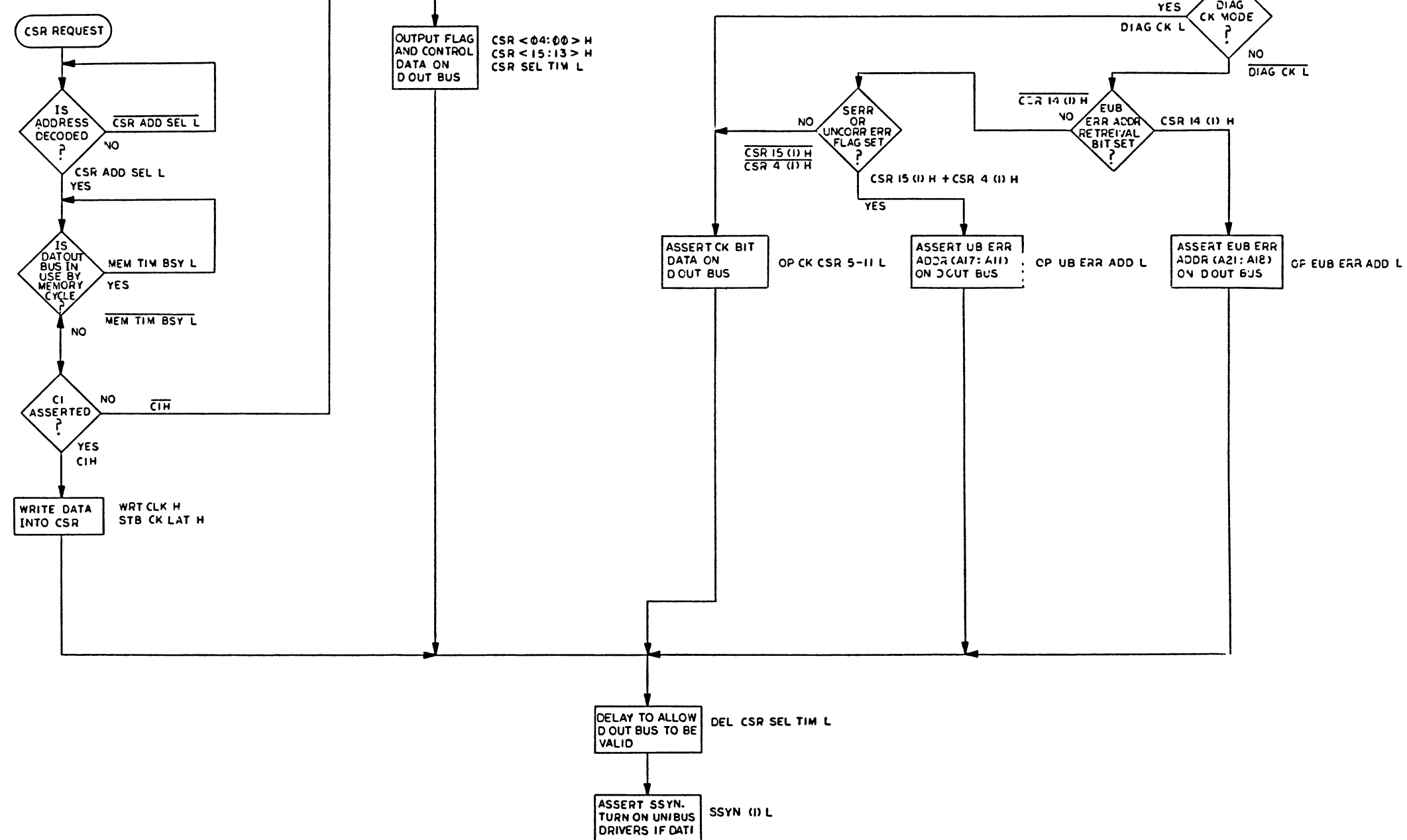
B

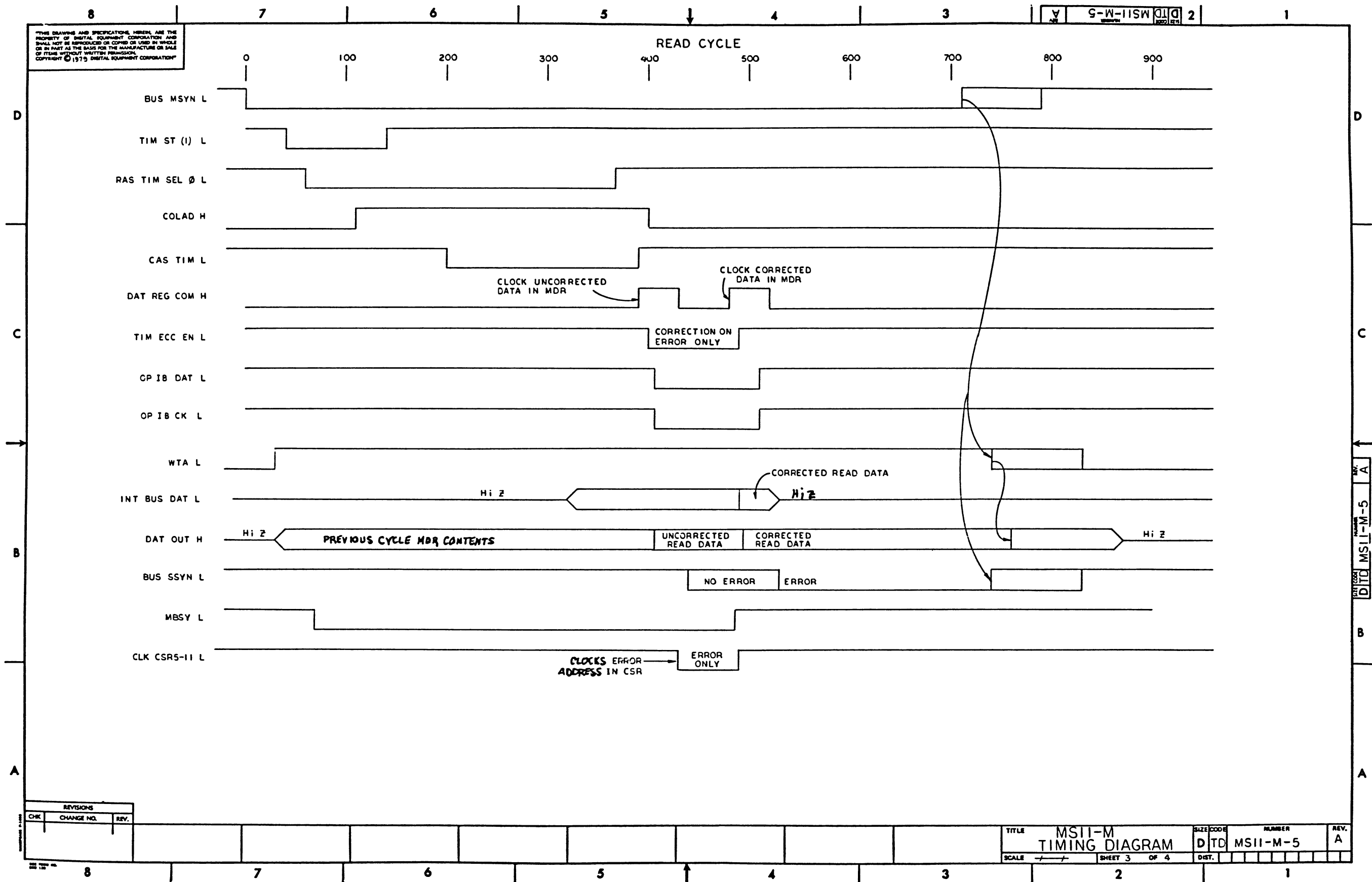
A

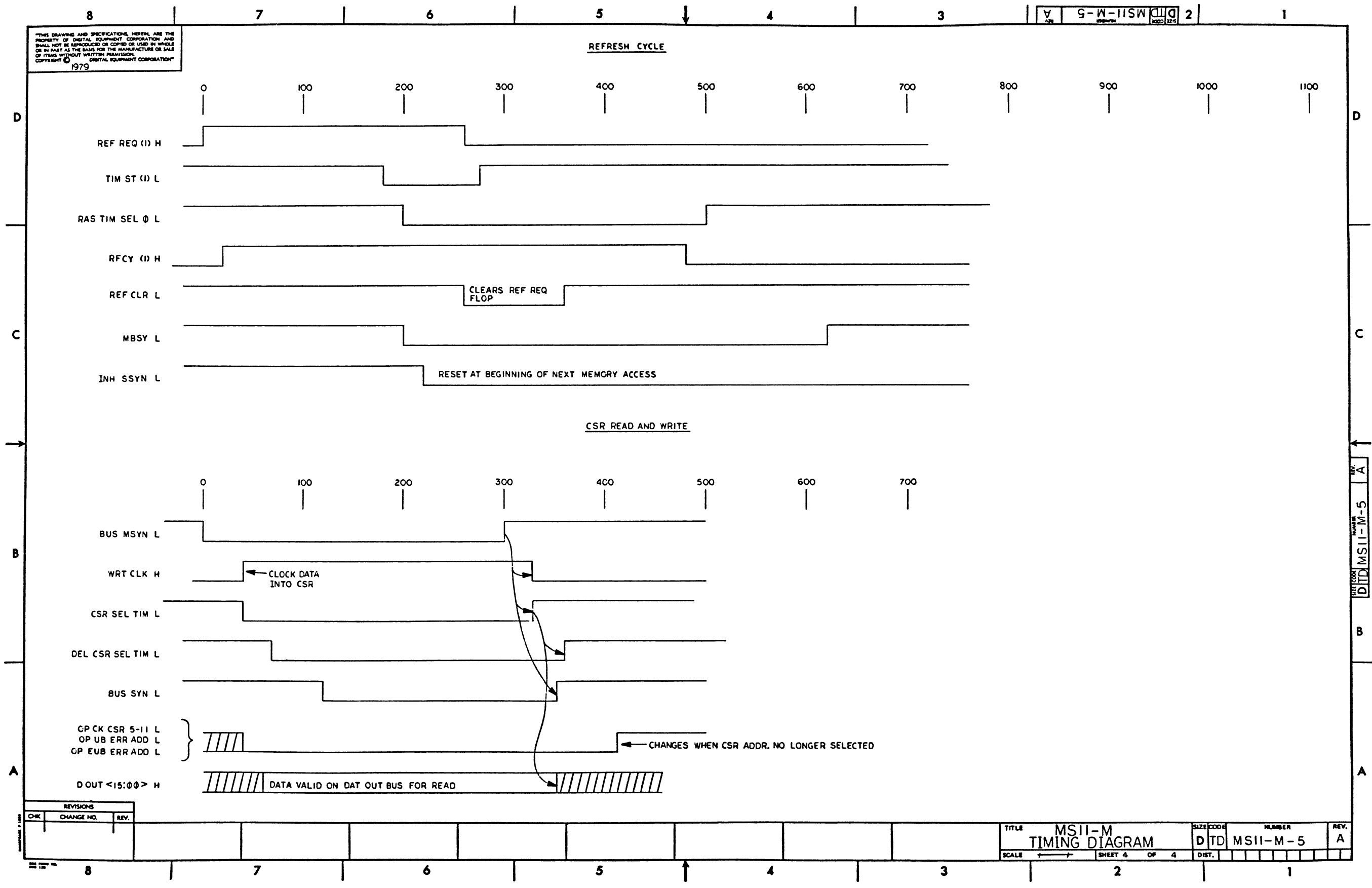
REVISIONS		
CHK	CHANGE NO.	REV.

(DATO, DATOB CYCLE)		TITLE	SIZE CODE	NUMBER	REV.
		MSII-M FLOW DIAGRAM	DFD	MSII-M-3	A
SCALE		SHEET 3 OF 4		DIST.	

THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. DIGITAL EQUIPMENT CORPORATION. COPYRIGHT © 1979







REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		MS11-M	SIZE CODE	NUMBER	REV.
TIMING DIAGRAM		D TD	MS11-M-5	A	
SCALE		SHEET 4	OF 4	DIST.	

BLANK

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION			REFERENCE DESIGNATOR
					BB	BC	BF	
1	1		5013505-00	128K ECC UNIBUS MEM ETCH CIR. BD	1	1	1	
2	2		1012219-00	47. MFD 30V GZ 600D AL EL	2	2	2	C400,C401
3	3		1012121-00	220.0 MMF 100V 1%200PPM DM15S	4	4	4	C1,C3,C4,C7
4	4		1001610-00	.01 MFD 50V -20+80 Z5U AXIAL	33	33	33	C2,C111-C131,C220-C230
5	5		1012084-01	8 MFD 25V GZ 30D AL EL	5	5	5	C100-C103,C200
6	6		1010279-01	.47 MFD 25V 20% 2C023 CER.	101	101	101	C210-C214,C310-C357,C410-C457
7	7		1110994-00	1N 751A VZ= 5.1 5% .40W	1	1	1	D5
8	8		1109991-00	1N 754A VZ= 6.8 5% .40W	1	1	1	D4
9	9		1104860-00	*** THIS ITEM IS NOT USED ***	-	-	-	
10	10		1110324-00	LED 1MCD@10MA PIV=3	1	1	1	D2
11	11		1114384-00	LED 105MW 35MA GREEN	1	1	1	D3
12	12		1210711-02	HANDLE,MODULE,HEX	1	1	1	
13	13		1211164-04	SW,DIP 1P 1A 8POS	1	1	1	E46
14	14		1211164-00	SW,DIP 1P 1A 4POS	1	1	1	E61
15	15		1302124-00	18.0 .25 W 5.0 % CC	2	2	2	R7,R31
16	16		1301890-00	560.0 .25 W 5.0 % CC	1	1	1	R2
17	17		1304863-00	316 1/4W 1% RN55D-F 100PPM	2	2	2	R11,R12
18	18		1301424-00	*** THIS ITEM IS NOT USED ***	-	-	-	
19	19		1300447-00	4.70 K .25 W 5.0 % CC	11	11	11	R10,R13,R14,R18-R20,R22-R24,E26,
								CONT R30
20	20		1300316-00	470.0 .25 W 5.0 % CC	1	1	1	R21
21	21		1300365-00	1.0 K .25 W 5.0 % CC	1	1	1	R15
22	22		1300309-00	*** THIS ITEM IS NOT USED ***	-	-	-	
23	23		1300229-00	100.0 .25 W 5.0 % CC	1	1	1	R5
24	24		1301972-00	270.0 .25 W 5.0 % CC	2	2	2	R27,R28
25	25		1300202-00	47.0 .25 W 5.0 % CC	1	1	1	R29
26	26		1300444-00	3.90 K .25 W 5.0 % CC	1	1	1	R4
27	27		1311594-00	30.1 K 1/4W 1% RN55D-F 100PPM	1	1	1	R6
28	28		1315339-00	R NETWORK 4-5K 5.0 % 5PIN	3	3	3	R100-R102
29	29		1316187-00	R NETWORK 3-18 5.0 % 6PIN	8	8	8	R200-R207

REVISION HISTORY			BASIC PART NO: M8722			DRN: J.LIZOTTE			DATE: 14-DEC-78			D I G I T A L		
ENG	ECO NUMBER	REV	SECTION A OF A			APR D. C.			TITLE			PARTS LIST		
---	INITIAL	B	SECTION.VARIATION INDEX			CHK'D: D.CARUSSO			DATE: 14-DEC-78			ECC MOS MEMORY		
			[A] BB,BC,BF			DES.ENG: J.MANTON			DATE: 14-DEC-78					
			[B]			RESP.ENG: J.MANTON			DATE: 14-DEC-78			DOCUMENT NUMBER		
			[C]			MFG.ENG.: R.SCHAAF			DATE: 14-DEC-78			SIZE!CODE! NUMBER ! REV		
			[D]			ASSEMBLY NUMBER:			TOP DOCUMENT NUMBER:			FILE NAME:		
			[E]			ID-UA-M8722-0-0						Z04728.PLS		
			[F]									EDIT #		
			[G]									3		

"THIS DRAWING AND SPECIFICATIONS HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT (C) 1980. DIGITAL EQUIPMENT CORPORATION "

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION			REFERENCE DESIGNATOR
					BB	BC	BF	
30	30		1316186-00	R NETWORK 1-12 2-18 6PIN	8	8	8	R300-R307
31	31		1613120-00	DELAY= 200NS,10TAPS	2	2	2	E5,E21
32	32		1910532-00	74S00 NAND GATE-QUAD 2IN	1	1	1	E31
33	33		1912799-00	LS00 NAND-GATE-QUAD 2IN,P	1	1	1	E25
34	34		1912388-00	74S02 NOR GATE-QUAD 2IN,PO	1	1	1	E42
35	35		1911469-00	DEC 8640 RECEIVER,BUS,QUAD,U	1	1	1	E38
36	36		1910533-00	74S03 NAND GATE-QUAD 2IN,O	1	1	1	E22
37	37		1909705-00	DEC 8881 NAND GATE-QUAD 2IN O	1	1	1	E27
38	38		1914451-00	74LS393 COUNTER,BINARY,4BIT	2	2	2	E54,E56
39	39		1910547-00	74S153 MUX 1 OF 4 (DUAL)	5	5	5	E40,E41,E47,E49,E53
40	40		1911944-00	555CN TIMER,FUNCT.BLOCK	1	1	1	E11
41	41		1910534-00	74S04 INVERTER GATE-HEX 1I	1	1	1	E60
42	42		1910544-01	74S74-60GG-D DUAL,EDGE TRIG	1	1	1	E26
43	43		1912824-00	LS74 FF-D DUAL,EDGE TRIGG	2	2	2	E15,E43
44	44		1911116-00	DEC 8837 RECEIVER,BUS,HEX,UN	4	4	4	E23,E32,E44,E50
45	45		1915219-00	LS373 FF-D OCTAL-TRANSPARE	3	3	3	E3,E18,E39
46	46		1914214-00	LS374 FF-D OCTAL EDGE TRIG	3	3	3	E7,E28,E68
47	47		1911579-00	8641 TRANSCEIVER,BUS,QUA	4	4	4	E1,E6,E12,E17
48	48		1910539-00	74S20 NAND GATE-DUAL 4INPU	1	1	1	E37
49	49		1912828-00	LS85 COMPARATOR,4BIT MAGN	1	1	1	E65
50	50		1912697-00	LS174 FF-D HEX W/CLEAR	1	1	1	E0
51	51		1915193-00	LS244 DRIVER,LINE,OCTAL,T	1	1	1	E14
52	52		1911573-00	74S280 PARITY GEN/CHKR,9BIT	11	11	11	E48,E66,E69,E71,E72,E75,E78, CONT E81-E84
53	53		1912096-00	DEC 74S86 XOR GATE,QUAD 2IN	2	2	2	E36,E64
54	54		1914086-00	74S30 NAND GATE-POS 8IN	1	1	1	E55
55	55		1913777-00	LS240 DRIVER,LINE,OCTAL,T	1	1	1	E9
56	56		1912389-00	74S08 AND GATE-QUAD 2IN,PO	1	1	1	E24
57	57		1912125-00	74S135 XOR/NOR GATE-QUAD 2I	1	1	1	E59
58	58		1913493-00	74S241 OCTAL BUFFER,TRI-STA	5	5	5	E70,E76,E77,E79,E80
59	59		2113825-01	16K MOS RAM 200NS 1	156	-	-	E100-E138,E200-E238,E300-E338, CONT E400-E438
60	60		23259F1-00	F1-01	1	1	1	E34
61	61		23001J5-00	J5-01	1	1	1	E10
62	62		23002J5-00	J5-01	1	1	1	E19
63	63		23003J5-00	J5-01	1	1	1	E4
64	64		23004J5-00	J5-01	1	1	1	E30
65	65		23005J5-00	J5-01	1	1	1	E35
66	66		23006J5-00	J5-01	1	1	1	E33
67	67		23007J5-00	J5-01	1	1	1	E20
68	68		23008J5-00	J5-01	1	1	1	E29
69	69		23009J5-00	J5-01	1	1	1	E52
70	70		23001K3-00	K3-01	8	8	8	E45,E51,E57,E58,E62,E63,E67,E73
71	71		23002K3-00	K3-01	2	2	2	E2,E13
72	72		9009185-00	*** THIS ITEM IS NOT USED ***	-	-	-	
73	73		9000024-01	EYELET, ROLLED FLANGE, .121 OD X	12	12	12	
74	74		9009149-00	PIN, STAKING, P.C. BOARD, .025 X	2	2	2	TP1,TP2
75	75		2114408-01	16K MOS RAM 200NS 1	-	156	-	E100-E138,E200-E238,E300-E338,

I	D	I	G	I	T	A	L	TITLE	SECTION A OF A	SIZE	CODE	DOCUMENT NUMBER	REV
I	D	I	G	I	T	A	L	ECC MOS MEMORY		K	PL	M8722-BA-DBP	B

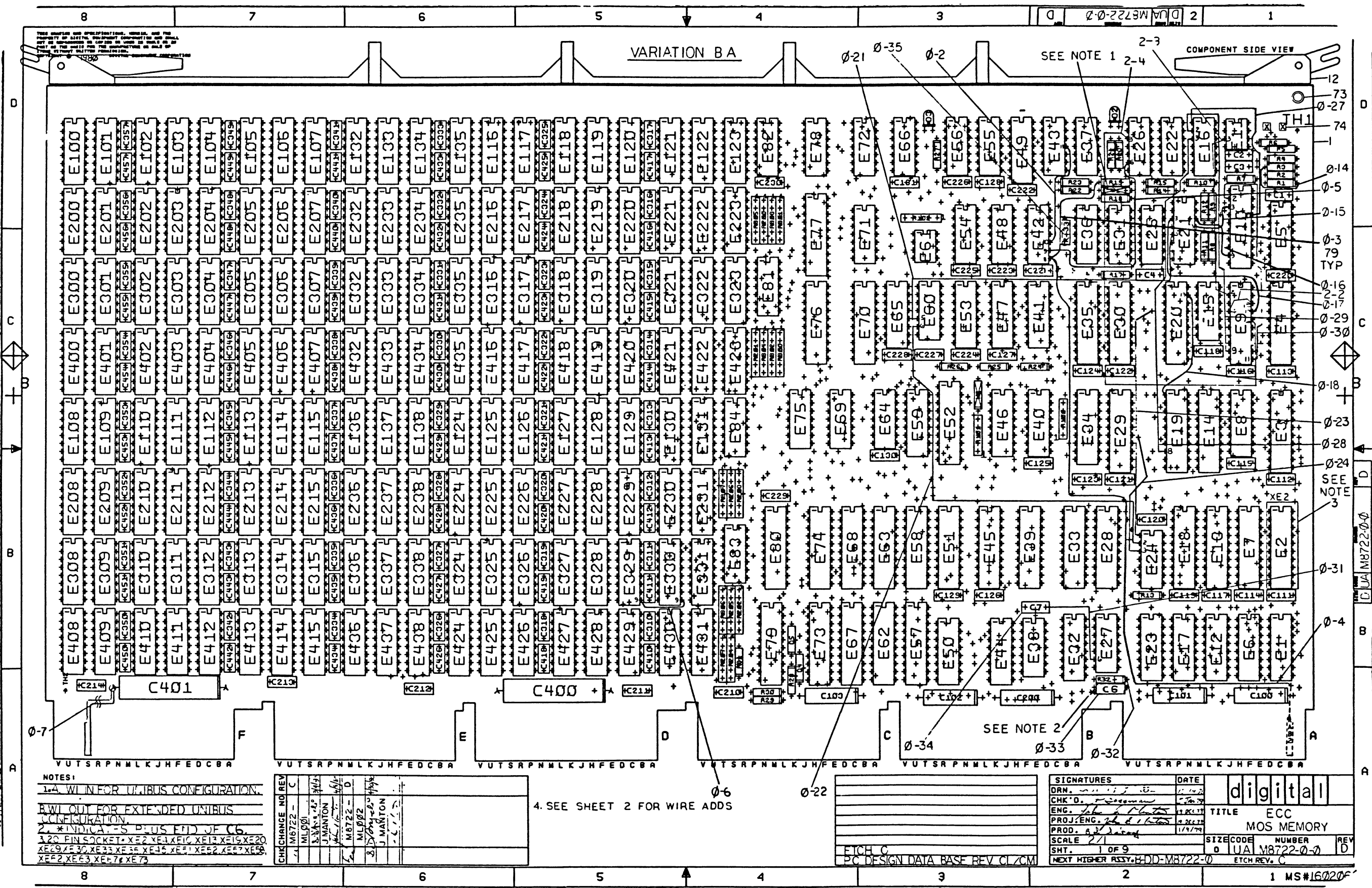
SHEET A3 OF A3

```

94 NOTE:      0  M8722-BA IS THE PRIMARY VARIATION OF THE 128K X 16 BITS SYSTEM (NOT A MODULE TYPE).
95 NOTE:      1  M8722-BB IS A MODULE TYPE USING MOSTEK 16K MOS DEVICES.
96 NOTE:      2  M8722-BC IS A MODULE TYPE USING FUJITSU 16K MOS DEVICES.
97 NOTE:      3  M8722-BF IS A MODULE TYPE USING HITACHI MOS DEVICES.
98 NOTE:      4  AMP VENDOR ONLY (640824-1).

```

! D !	I !	G !	I !	T !	A !	L !	TITLE	SECTION A	OF A	SIZE	CODE	DOCUMENT NUMBER	REV
!	!	!	!	!	!	!	ECC MOS MEMORY	!	!	!	!	!	!
!	!	!	!	!	!	!	!	!	!	K	PL	M8722-BA-DBP	B



NOTES:
1. A. W/L FOR UNIBUS CONFIGURATION.
B. W/L OUT FOR EXTENDED UNIBUS CONFIGURATION.
2. *INDICATES PLUS END OF C6.
3. 20 PIN SOCKET: XE2, XE1, XE1C, XE13, XE15, XE20, XE29, XE30, XE33, XE34, XE35, XE37, XE52, XE62, XE58, XE63, XE67, XE73.

CHG	NO	REV	DATE	BY	CHK
1	16722	-	1/1/79	J. MANTON	
2	16722	-	1/1/79	J. MANTON	
3	16722	-	1/1/79	J. MANTON	

4. SEE SHEET 2 FOR WIRE ADDS

ETCH C
PC DESIGN DATA BASE REV C1ZCM

SIGNATURES		DATE
ORN.		1/1/79
CHK'D.		1/1/79
ENG.		1/1/79
PROJ. ENG.		1/1/79
PROD.		1/1/79
SCALE	2/1	
SHT.	1 OF 9	
NEXT HIGHER ASSY: BDD-M8722-0		ETCH REV. C

digital	
TITLE ECC	
MOS MEMORY	
SIZE CODE	NUMBER
0	UAI M8722-0-0
REV	0

1980

LAYER 1
M8722 5013505 C

L1

2 DUE M8722-0-0 10: 2

C-21

6-2 6-9

CS*ARCLFHUKLNPRS
E101 E102 E103

E132 E133

E118 E119

E82 E78

SIDE 1

E49 E43

digital

TP1 TP2

7-7

5-26

FILE	ECC MOS MEMORY	DUA	M8722-0-0	0
REV	2/1	REV	5-9	

7

6

5

4

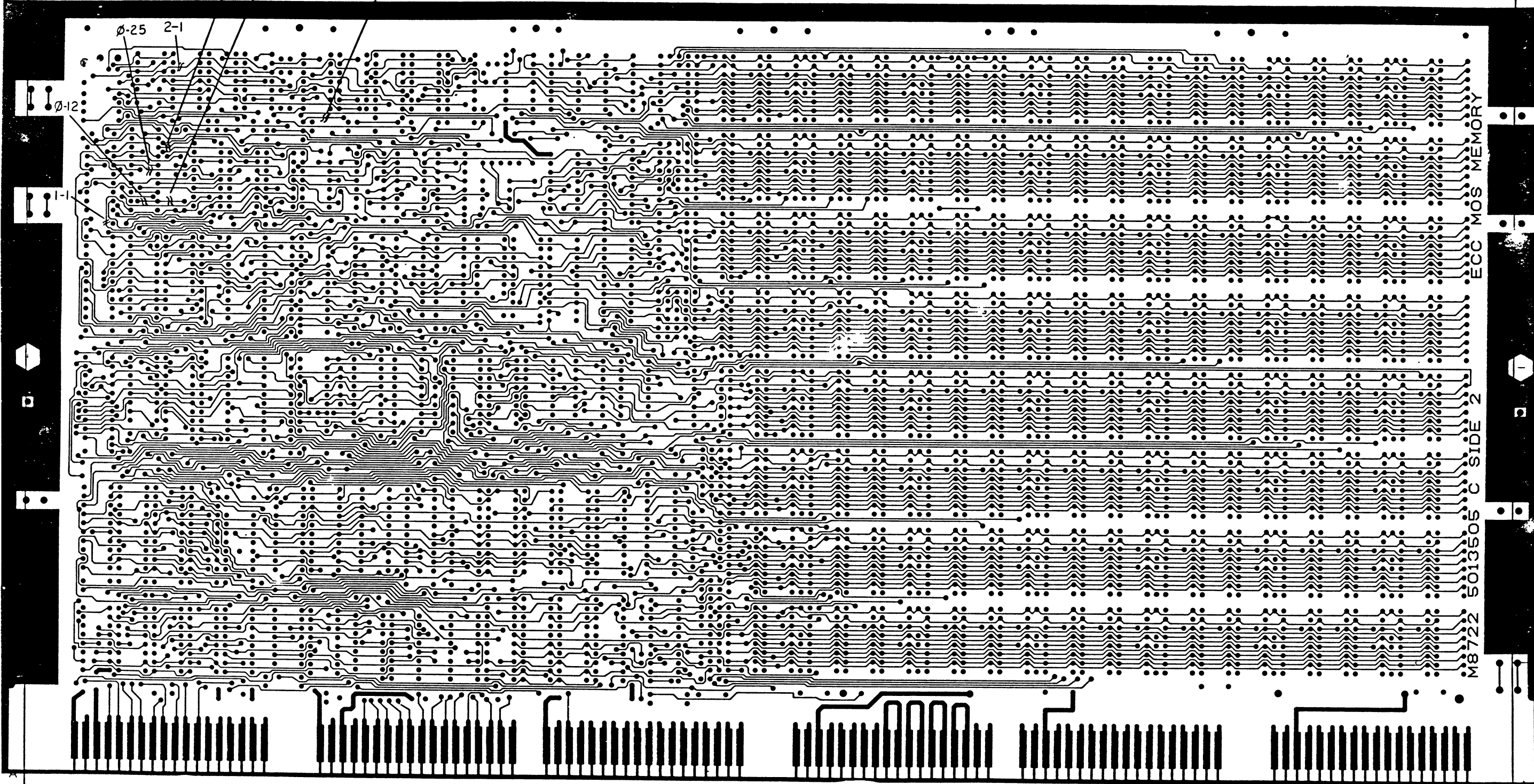
3

2

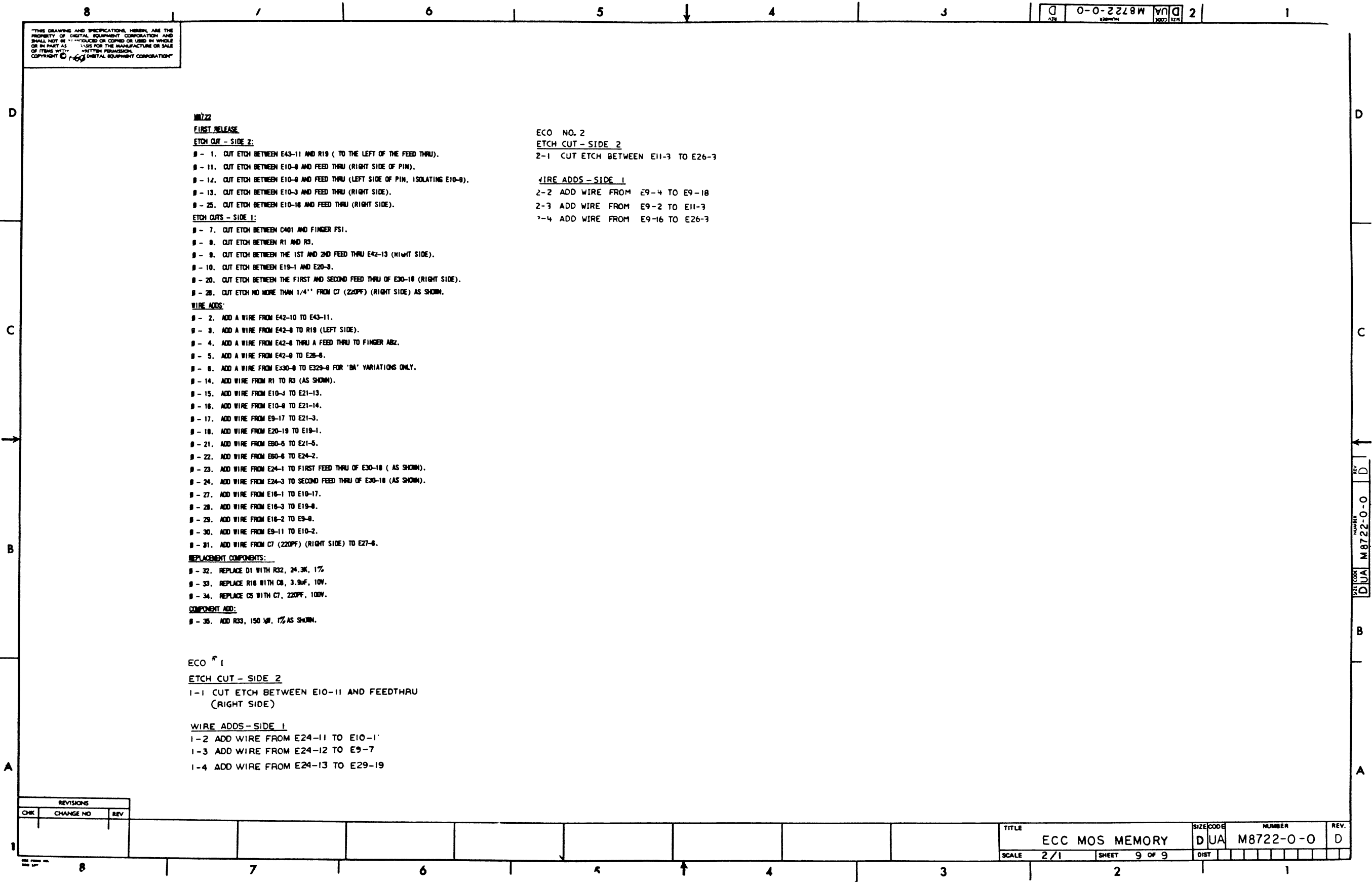
1

THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION OF DIGITAL EQUIPMENT CORPORATION.

L4 P A3YAJ



REVISIONS		
CHK	CHANGE NO	REV



"THIS DRAWING AND SPECIFICATIONS HEREON ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS A BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1977 DIGITAL EQUIPMENT CORPORATION"

SIZE CODE D U A NUMBER M 8722-0-0 2 1

M8722

FIRST RELEASE

ETCH CUT - SIDE 2:

- # - 1. CUT ETCH BETWEEN E43-11 AND R19 (TO THE LEFT OF THE FEED THRU).
- # - 11. CUT ETCH BETWEEN E10-8 AND FEED THRU (RIGHT SIDE OF PIN).
- # - 12. CUT ETCH BETWEEN E10-8 AND FEED THRU (LEFT SIDE OF PIN, ISOLATING E10-8).
- # - 13. CUT ETCH BETWEEN E10-3 AND FEED THRU (RIGHT SIDE).
- # - 25. CUT ETCH BETWEEN E10-16 AND FEED THRU (RIGHT SIDE).

ETCH CUTS - SIDE 1:

- # - 7. CUT ETCH BETWEEN C401 AND FINGER PS1.
- # - 8. CUT ETCH BETWEEN R1 AND R3.
- # - 9. CUT ETCH BETWEEN THE 1ST AND 2ND FEED THRU E42-13 (RIGHT SIDE).
- # - 10. CUT ETCH BETWEEN E19-1 AND E20-3.
- # - 20. CUT ETCH BETWEEN THE FIRST AND SECOND FEED THRU OF E30-18 (RIGHT SIDE).
- # - 28. CUT ETCH NO MORE THAN 1/4" FROM C7 (Z20FF) (RIGHT SIDE) AS SHOWN.

WIRE ADDS:

- # - 2. ADD A WIRE FROM E42-10 TO E43-11.
- # - 3. ADD A WIRE FROM E42-8 TO R19 (LEFT SIDE).
- # - 4. ADD A WIRE FROM E42-8 THRU A FEED THRU TO FINGER AR2.
- # - 5. ADD A WIRE FROM E42-8 TO E28-8.
- # - 6. ADD A WIRE FROM E430-8 TO E329-8 FOR 'BA' VARIATIONS ONLY.
- # - 14. ADD WIRE FROM R1 TO R3 (AS SHOWN).
- # - 15. ADD WIRE FROM E10-3 TO E21-13.
- # - 16. ADD WIRE FROM E10-8 TO E21-14.
- # - 17. ADD WIRE FROM E9-17 TO E21-3.
- # - 18. ADD WIRE FROM E20-19 TO E18-1.
- # - 21. ADD WIRE FROM E80-5 TO E21-5.
- # - 22. ADD WIRE FROM E80-8 TO E24-2.
- # - 23. ADD WIRE FROM E24-1 TO FIRST FEED THRU OF E30-18 (AS SHOWN).
- # - 24. ADD WIRE FROM E24-3 TO SECOND FEED THRU OF E30-18 (AS SHOWN).
- # - 27. ADD WIRE FROM E18-1 TO E18-17.
- # - 28. ADD WIRE FROM E18-3 TO E19-8.
- # - 29. ADD WIRE FROM E18-2 TO E9-8.
- # - 30. ADD WIRE FROM E9-11 TO E10-2.
- # - 31. ADD WIRE FROM C7 (Z20FF) (RIGHT SIDE) TO E27-8.

REPLACEMENT COMPONENTS:

- # - 32. REPLACE D1 WITH R32, 24.3K, 1%.
- # - 33. REPLACE R16 WITH C8, 3.9uF, 10V.
- # - 34. REPLACE C5 WITH C7, Z20FF, 100V.

COMPONENT ADD:

- # - 35. ADD R33, 150 Ω , 1% AS SHOWN.

ECO # 1

ETCH CUT - SIDE 2

- 1-1 CUT ETCH BETWEEN E10-11 AND FEEDTHRU (RIGHT SIDE)

WIRE ADDS - SIDE 1

- 1-2 ADD WIRE FROM E24-11 TO E10-1'
- 1-3 ADD WIRE FROM E24-12 TO E9-7
- 1-4 ADD WIRE FROM E24-13 TO E29-19

ECO NO. 2

ETCH CUT - SIDE 2

- 2-1 CUT ETCH BETWEEN E11-3 TO E26-3

WIRE ADDS - SIDE 1

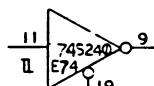
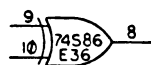
- 2-2 ADD WIRE FROM E9-4 TO E9-18
- 2-3 ADD WIRE FROM E9-2 TO E11-3
- 2-4 ADD WIRE FROM E9-16 TO E26-3

REVISIONS		
CHK	CHANGE NO	REV

TITLE		SIZE CODE	NUMBER	REV.
ECC MOS MEMORY		D U A	M8722-0-0	D
SCALE	SHEET	DIST		
2/1	9 OF 9			

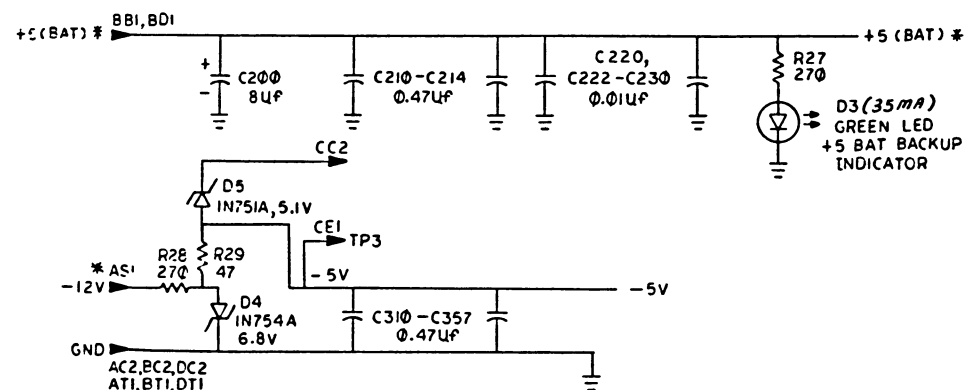
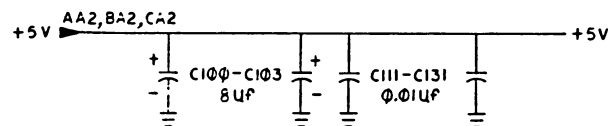
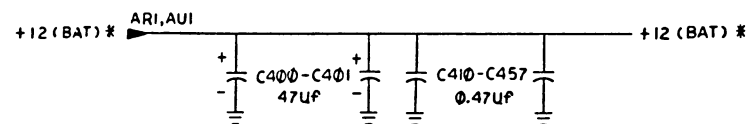
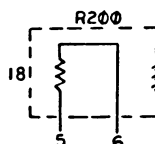
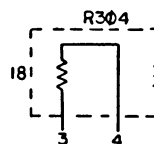
THE DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION.
COPYRIGHT © 1980, DIGITAL EQUIPMENT CORPORATION

SPARES

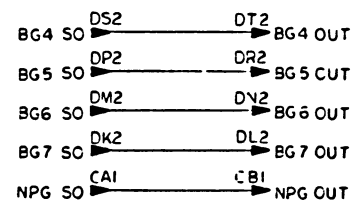


[2] OP CK RMW L [1, 10]

[9] PAR D H [1, 9/2]



BUS GRANT LINES



NOTES:

- SIGNAL NAMES WILL BE REFERENCED AS FOLLOWS:
[X/Z] SIGNAL NAME [X/Z]
NUMBER OF CONNECTION POINTS ON DESTINATION SHEET.
DESTINATION SHEET NUMBER.
NUMBER OF CONNECTION POINTS ON SOURCE SHEET.
SOURCE SHEET NUMBER.

- * INDICATES BATTERY BACKED UP.

- 5V AND +5V ARE AS FOLLOWS:

	GND	+5V
14 PIN DIP	7	14
16 PIN DIP	8	16
18 PIN DIP	9	18
20 PIN DIP	10	20

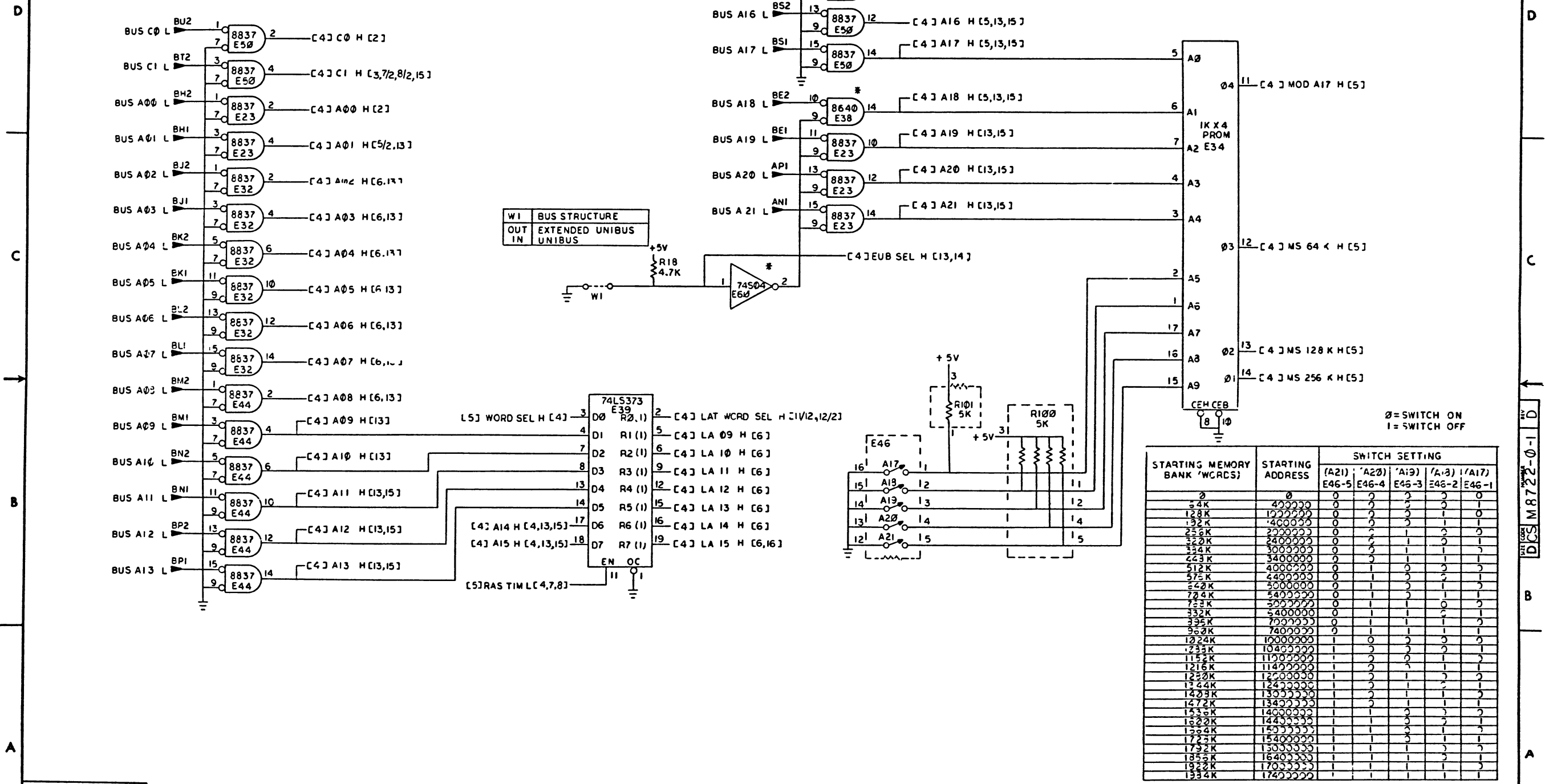
EXCEPTIONS ARE

9640	1	8
------	---	---

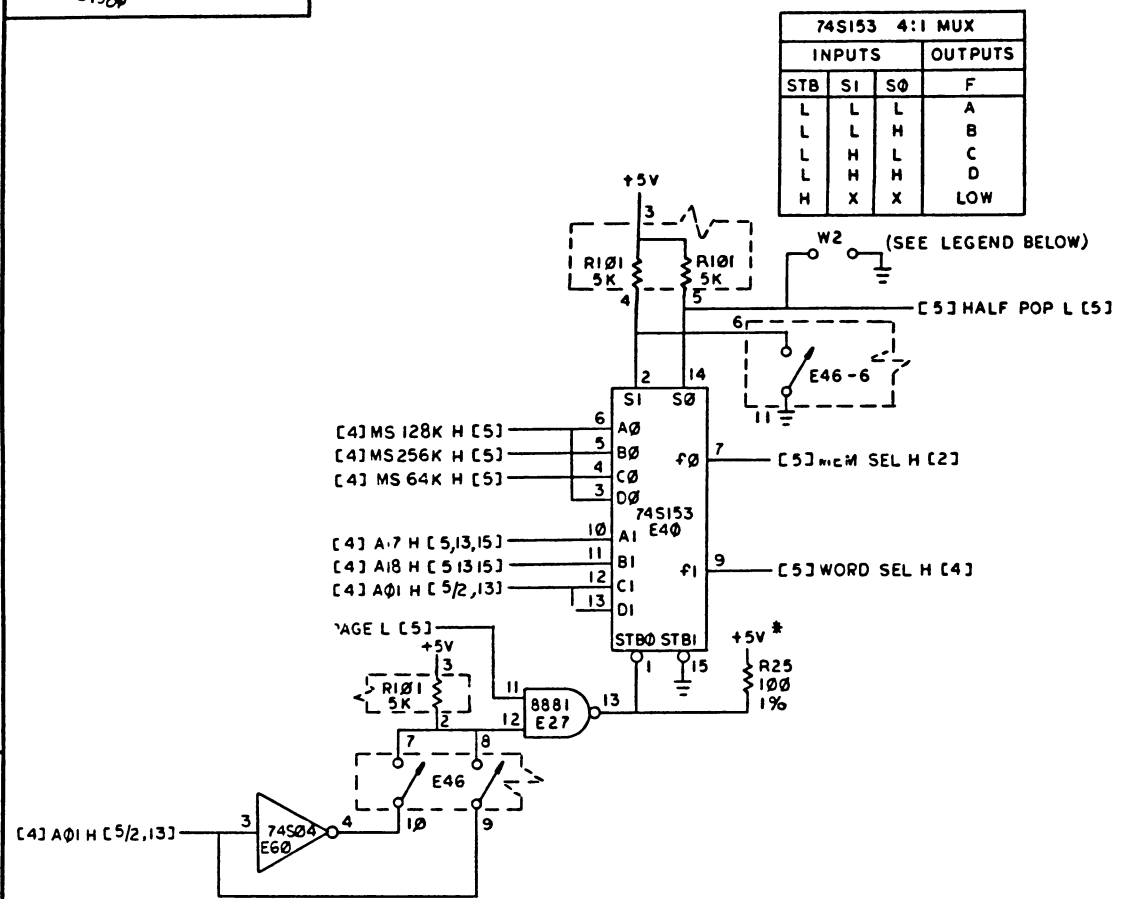
DRN	11/44	FIRST USED ON	11/44
CHKD	11/44	TITLE	ECC MOS MEMORY (MSIM)
ENG	11/44	SIZE	D
PROJ	11/44	CODE	CS
PROD	11/44	NUMBER	M8722-0-1
NEXT HIGHER ASSY		REV.	D
B-DD-M8722-0			
SCALE			
SHEET 1	OF 22	DIST	

THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. DIGITAL EQUIPMENT CORPORATION
1980

1-0-2228MSD 2

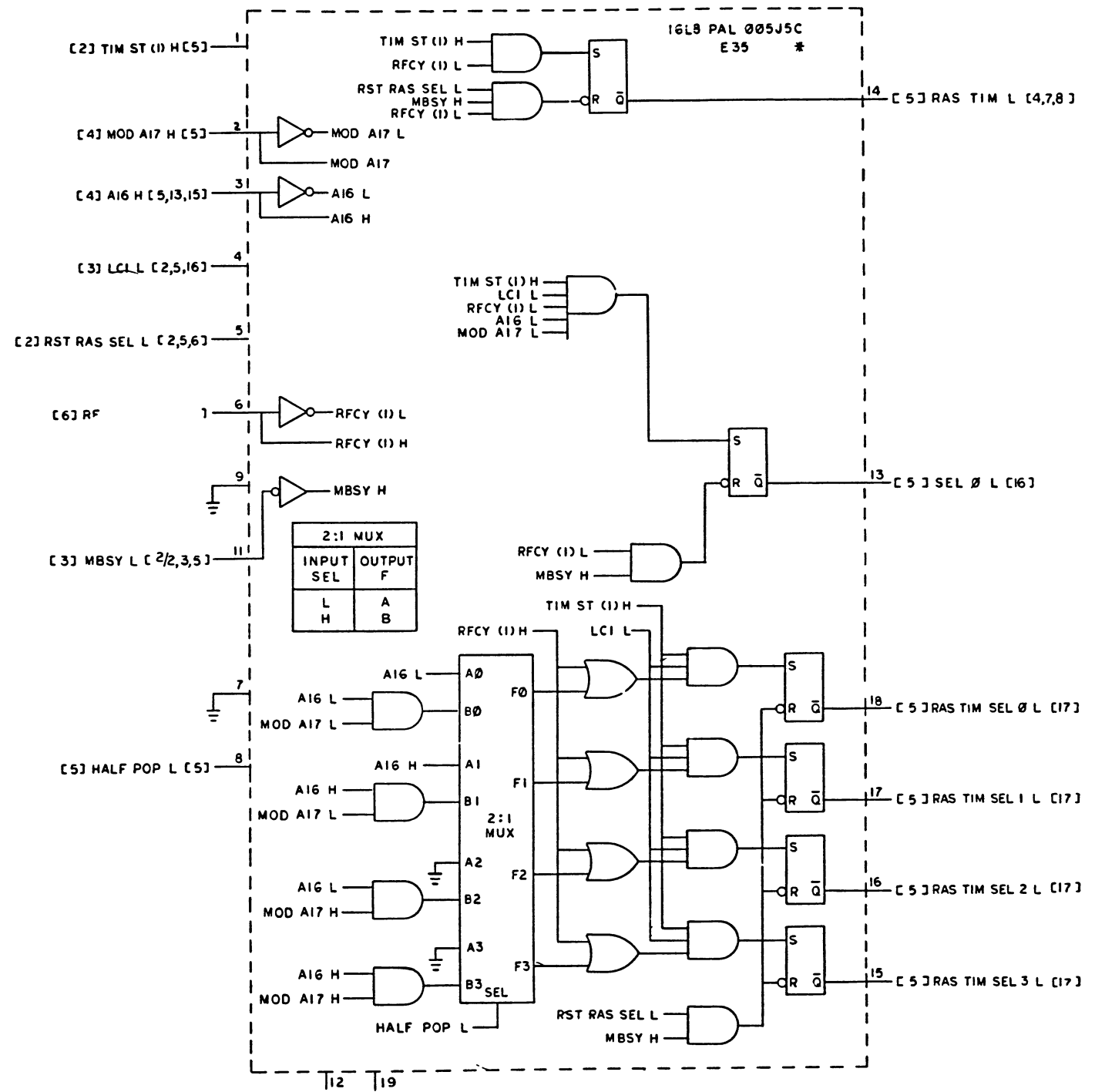


THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION.
COPYRIGHT © 1976 DIGITAL EQUIPMENT CORPORATION

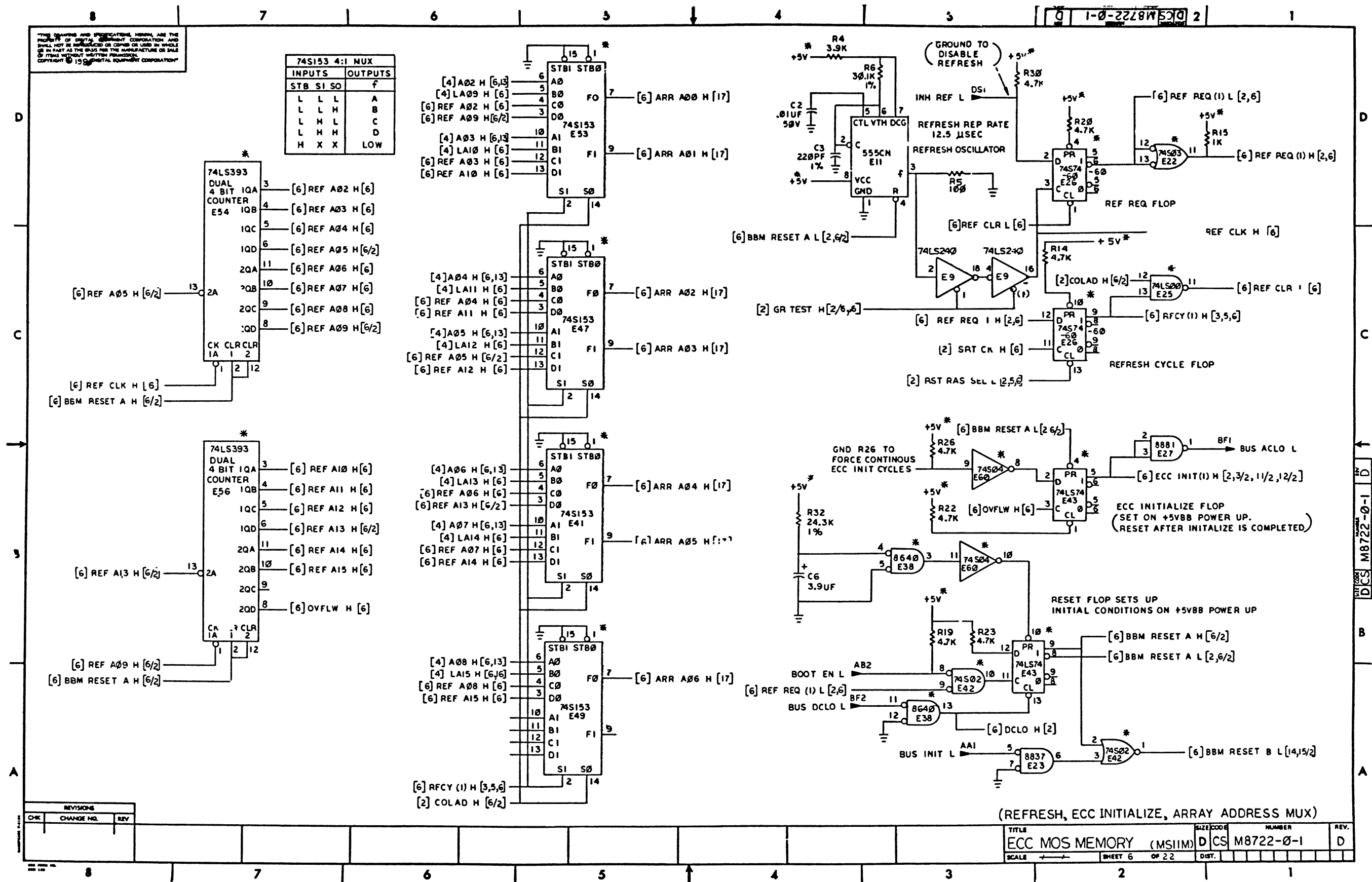


SW POSITION			USAGE	MEMORY CAPACITY AND INTERLEAVING
E46			JUMPER W2	
8	7	6		
OFF	OFF	OFF	IN	64K 1/2 POP NON INTERL.
OFF	OFF	OFF	OUT	128K FULLY POP NON INTERL.
OFF	ON	ON	IN	64K 1/2 POP INTERL RESPONDS TO A01 H NON ASSERTED
OFF	ON	ON	OUT	128K FULLY POP INTERL RESPONDS TO A01 H NON ASSERTED
ON	OFF	ON	IN	64K 1/2 POP INTERL RESPONDS TO A01 H ASSERTED
ON	OFF	ON	OUT	128K FULLY POP INTERL RESPONDS TO A01 H ASSERTED

NOTE: SW 8 & 7 MUST NOT BE ON AT THE SAME TIME

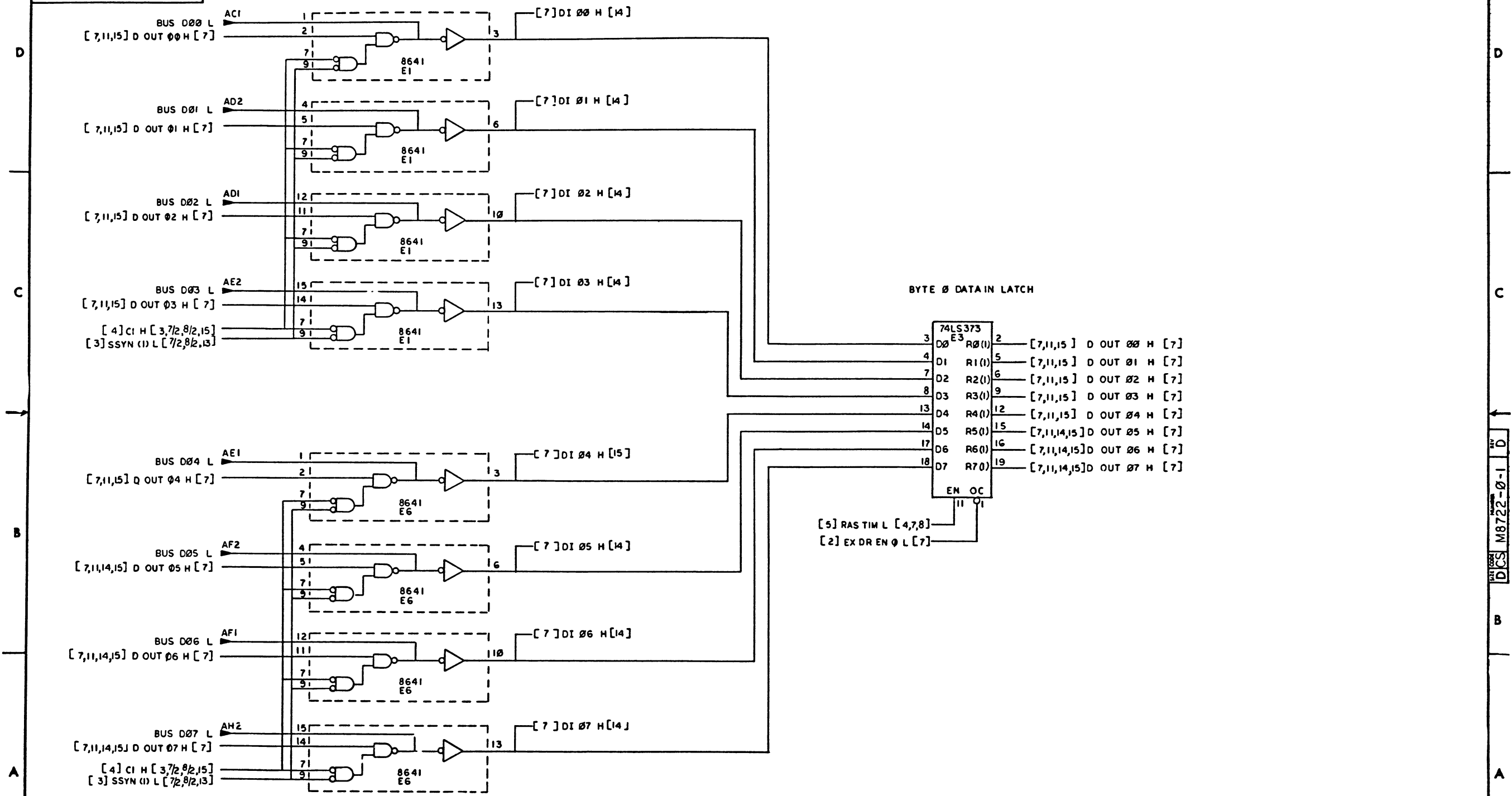


(MEMORY SELECT, INTERLEAVING
RAS TIM GENERATION)



THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION.
COPYRIGHT © 1980 DIGITAL EQUIPMENT CORPORATION

0 1-0-2228W SC 2 1



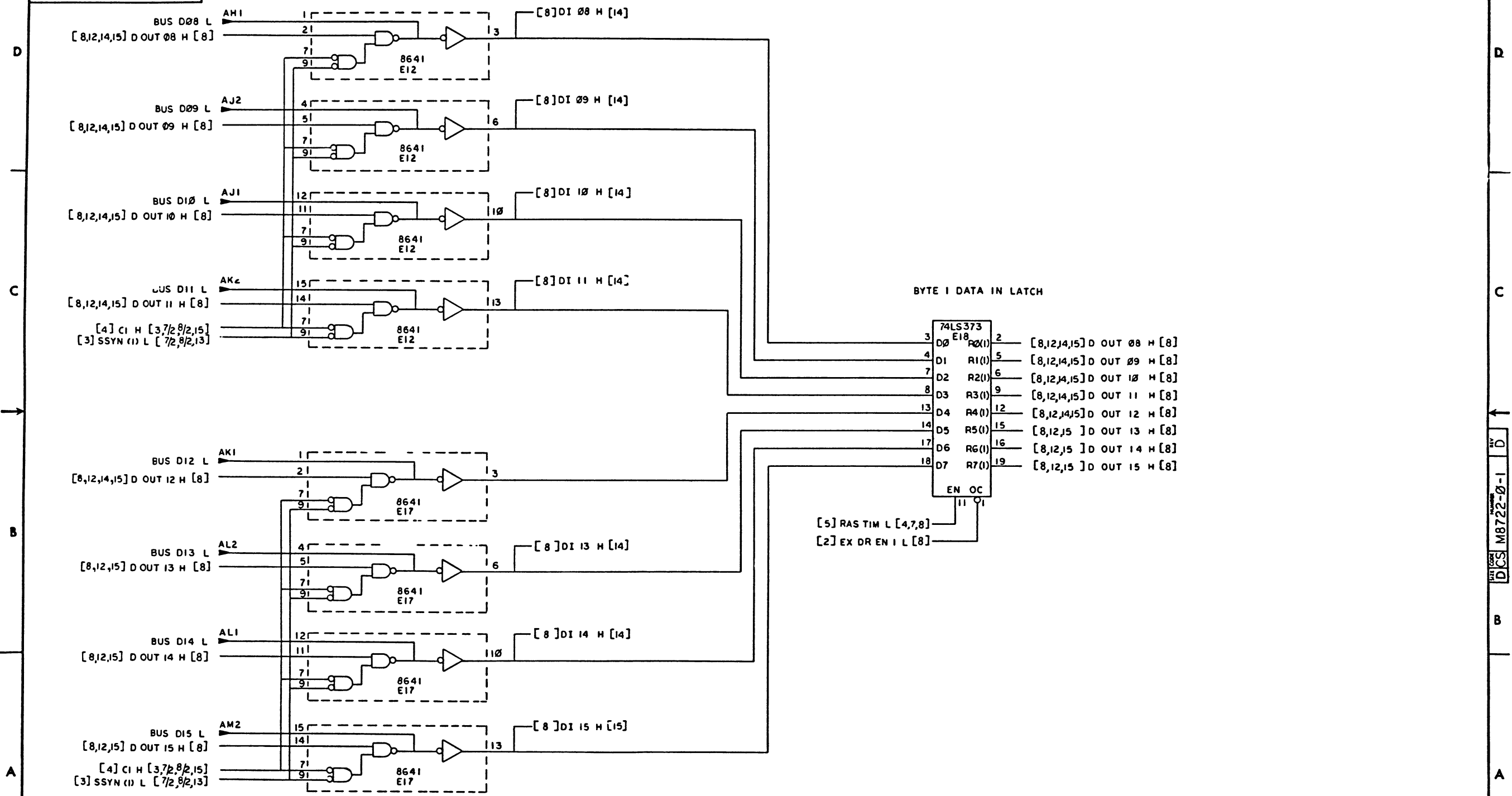
REVISIONS		
CHK	CHANGE NO.	REV

(BYTE 0 DATA DRIVERS, RECEIVERS AND LATCH)

TITLE		SIZE CODE	NUMBER	REV
ECC MOS MEMORY (MSIM)		D CS	M8722-0-1	D
SCALE	SHEET 7 OF 22	DIST.		

THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1972 DIGITAL EQUIPMENT CORPORATION

1-0-2228W 2



1-0-2228W 2

1-0-2228W 2

1-0-2228W 2

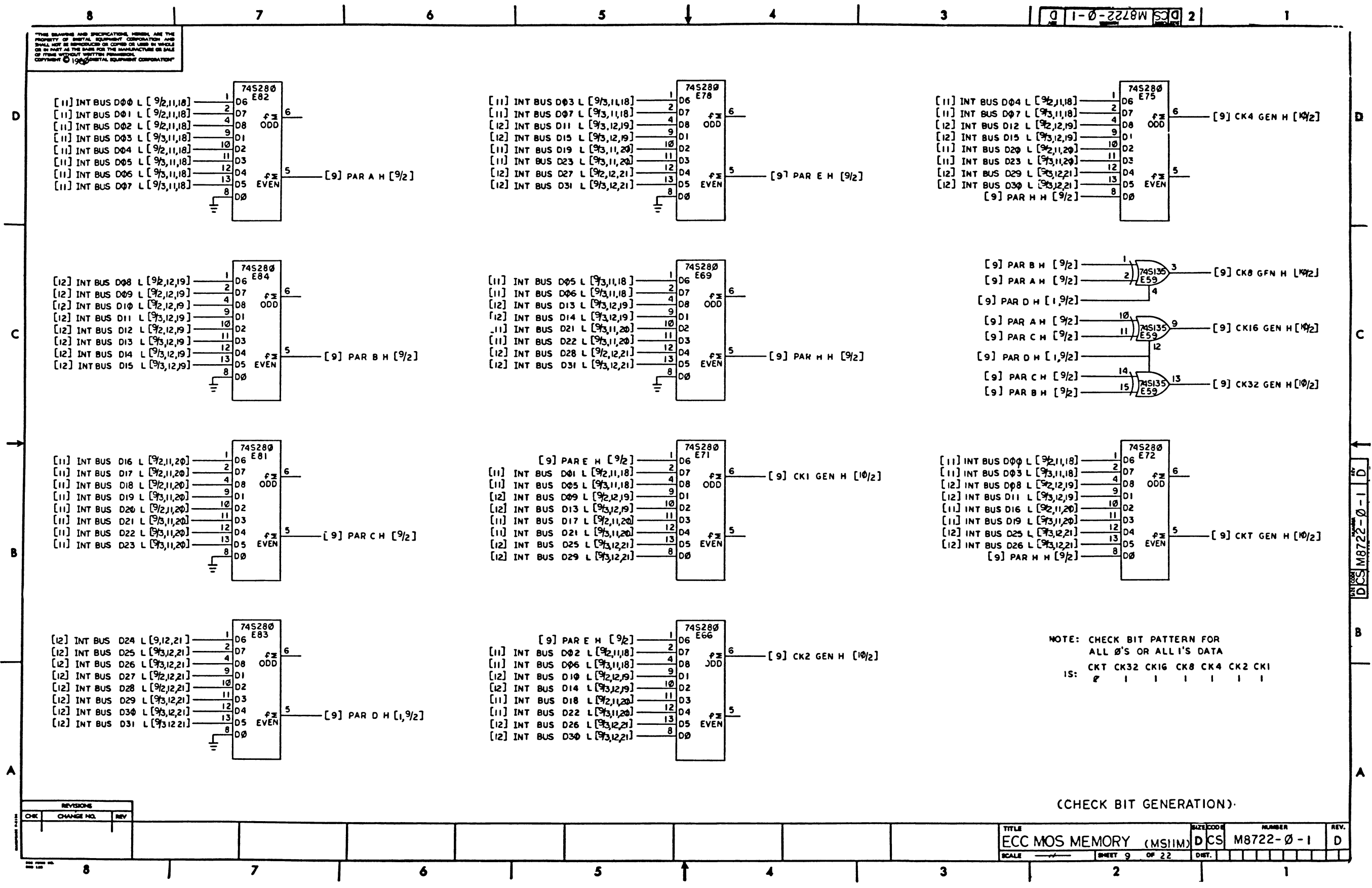
1-0-2228W 2

REVISIONS		
CHK	CHANGE NO.	REV

(BYTE 1 DATA DRIVERS, RECEIVERS AND LATCH)

TITLE		SIZE	CODE	NUMBER		REV.
ECC MOS MEMORY (MS11M)		D	CS	M8722-0-1		D
SCALE	+	SHEET 9	OF 22	DIST.		

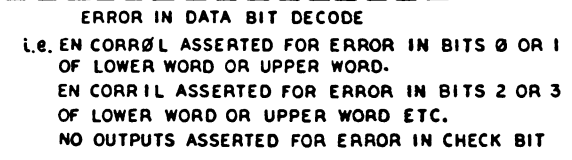
THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1970 DIGITAL EQUIPMENT CORPORATION



NOTE: CHECK BIT PATTERN FOR
ALL 0'S OR ALL 1'S DATA
IS: CKT CK32 CK16 CK8 CK4 CK2 CK1
0 1 1 1 1 1 1

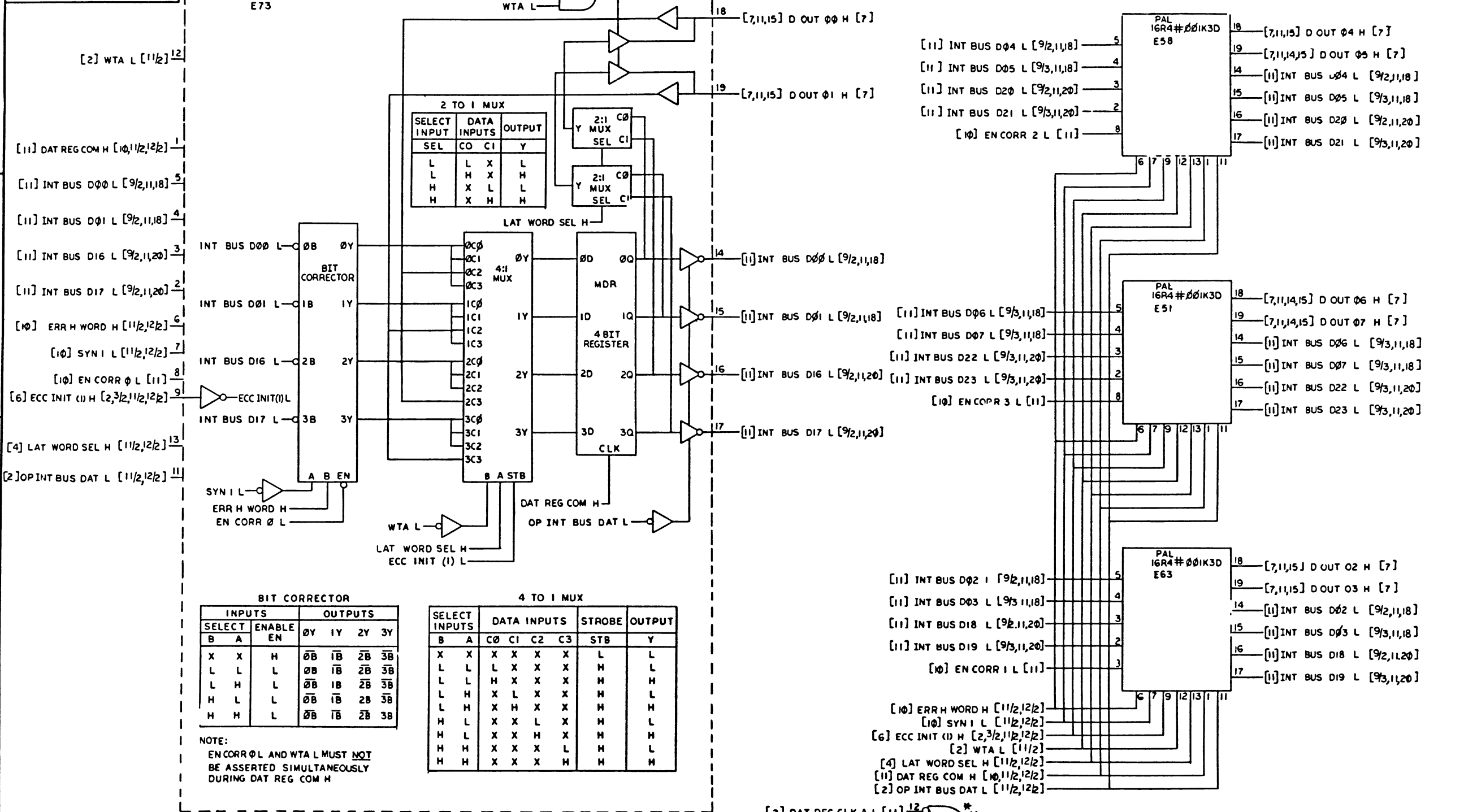
(CHECK BIT GENERATION)

TITLE		SIZE CODE	NUMBER	REV.
ECC MOS MEMORY (MS11M)		DCS	M8722-0-1	D
SCALE	SHEET 9 OF 22	DIST.		

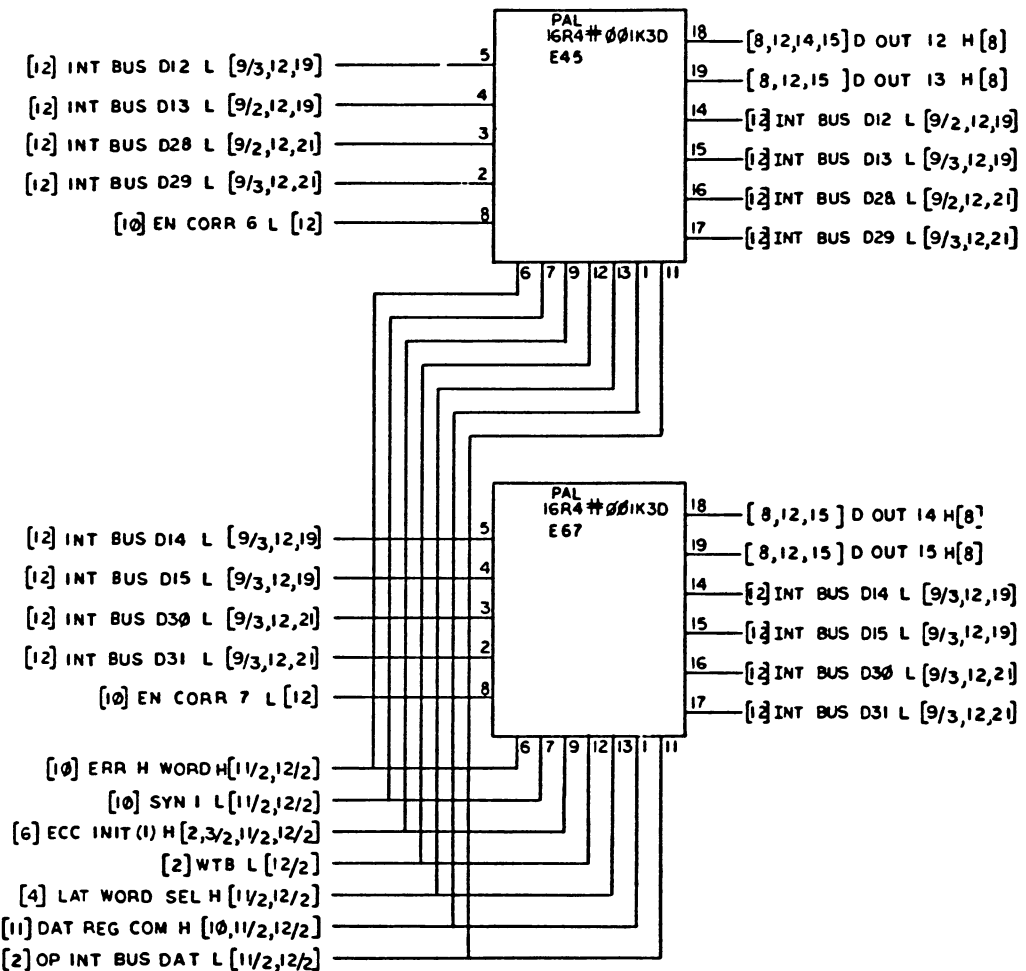
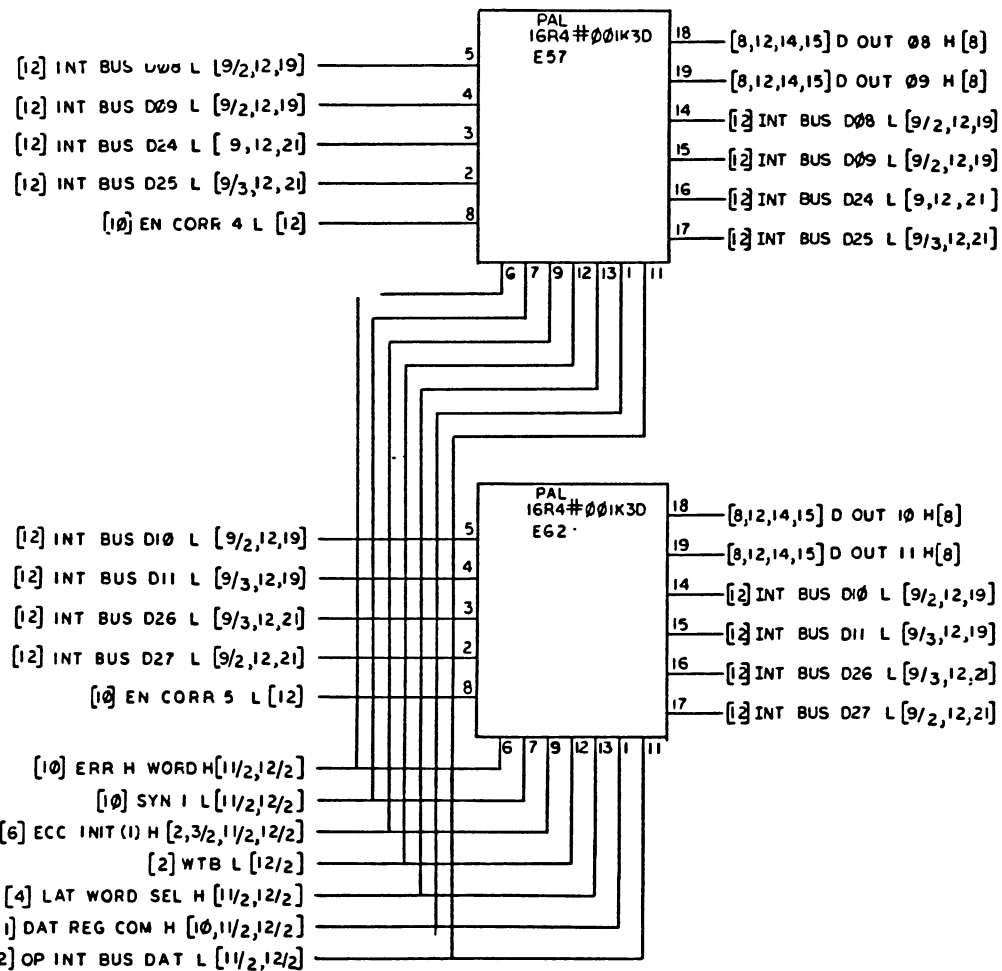


TITLE				SIZE CODE		NUMBER				REV.	
ECC MCS MEMORY (MS11M)				D CS		M8722-0-1				D	
SCALE		SHEET 10 OF 22		DIST							

THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. DIGITAL EQUIPMENT CORPORATION



THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1978 DIGITAL EQUIPMENT CORPORATION



DCS M8722-0-1

B

A

D

C

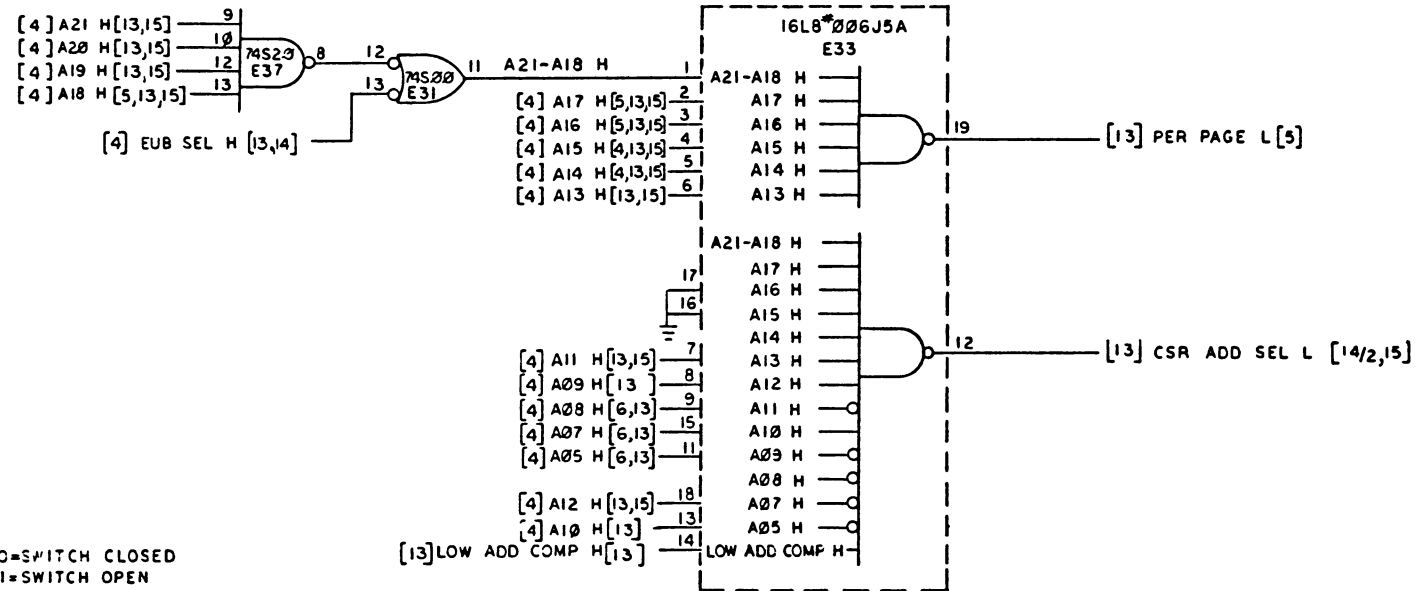
↑

1

(DATA CORRECTOR, MDR)

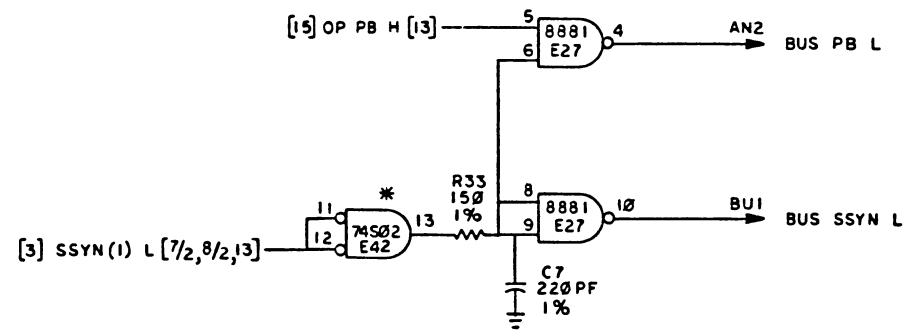
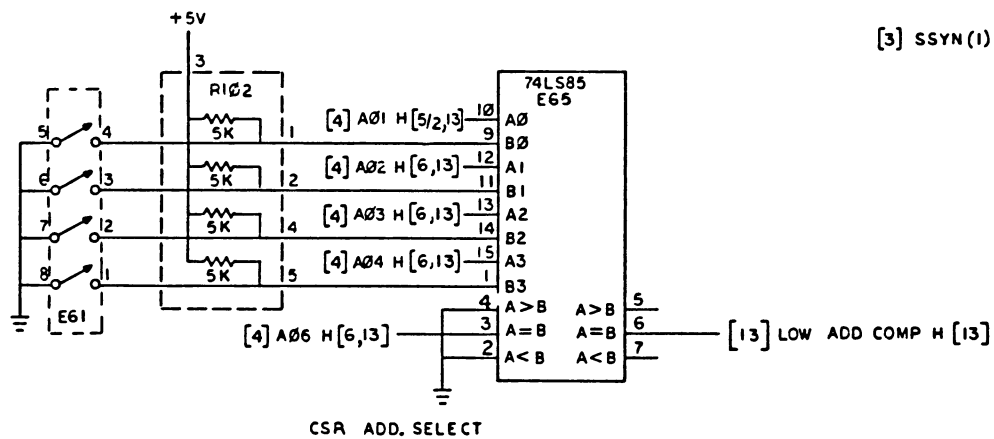
TITLE		SIZE CODE	NUMBER	REV.
ECC MOS MEMORY (MSIIM)		DCS	M8722-0-1	D
SCALE	SHEET 12 OF 22	DIST.		

THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION.
COPYRIGHT © 1972 DIGITAL EQUIPMENT CORPORATION



0=SWITCH CLOSED
1=SWITCH OPEN

CSR ADDRESS	A24	A03	A02	A01
77210C	0	0	0	0
772102	0	0	0	1
772104	0	0	1	0
772106	0	0	1	1
772110	0	1	0	0
772112	0	1	0	1
772114	0	1	1	0
772116	0	1	1	1
772120	1	0	0	0
772122	1	0	0	1
772124	1	0	1	0
772126	1	0	1	1
772130	1	1	0	0
772132	1	1	0	1
772134	1	1	1	0
772136	1	1	1	1



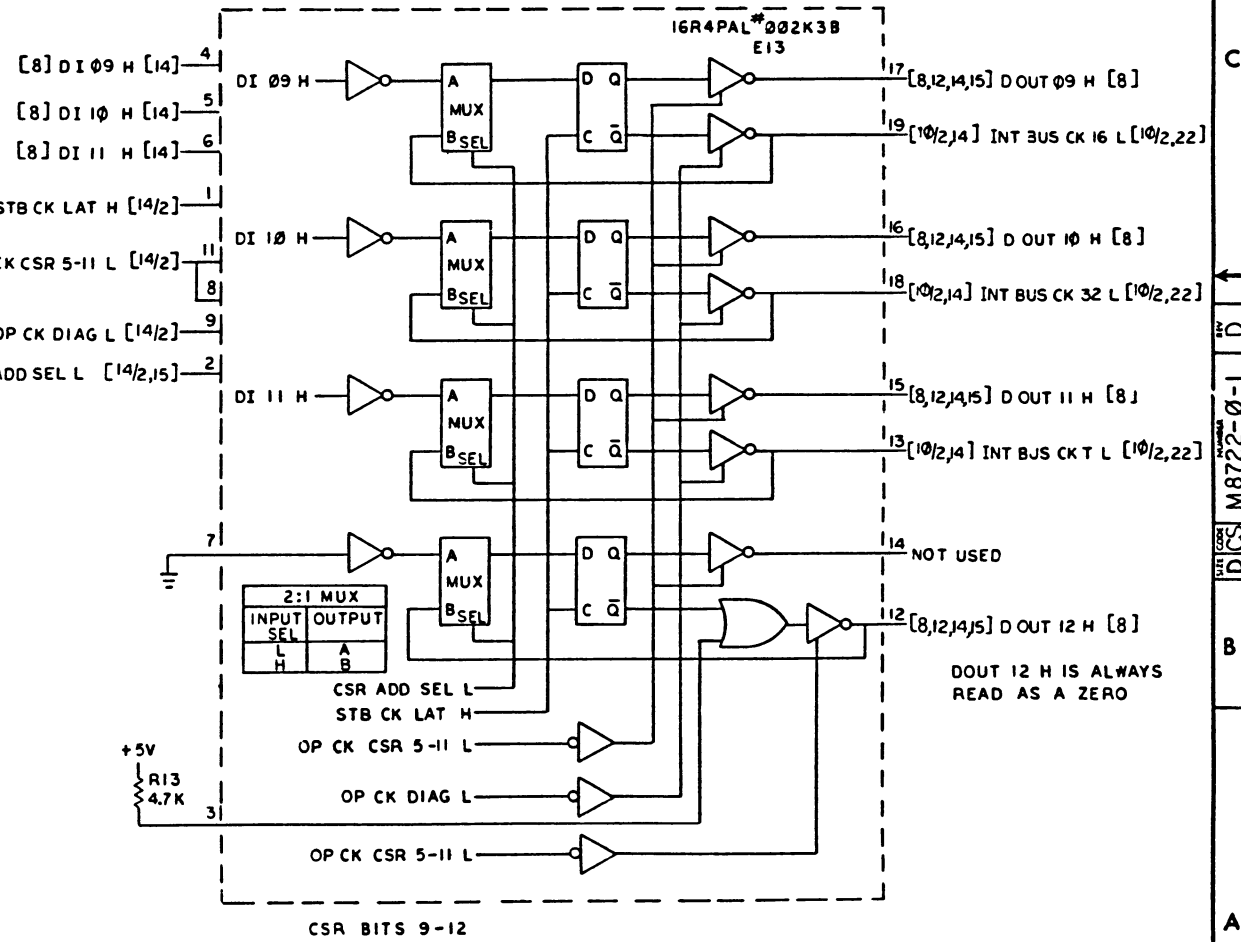
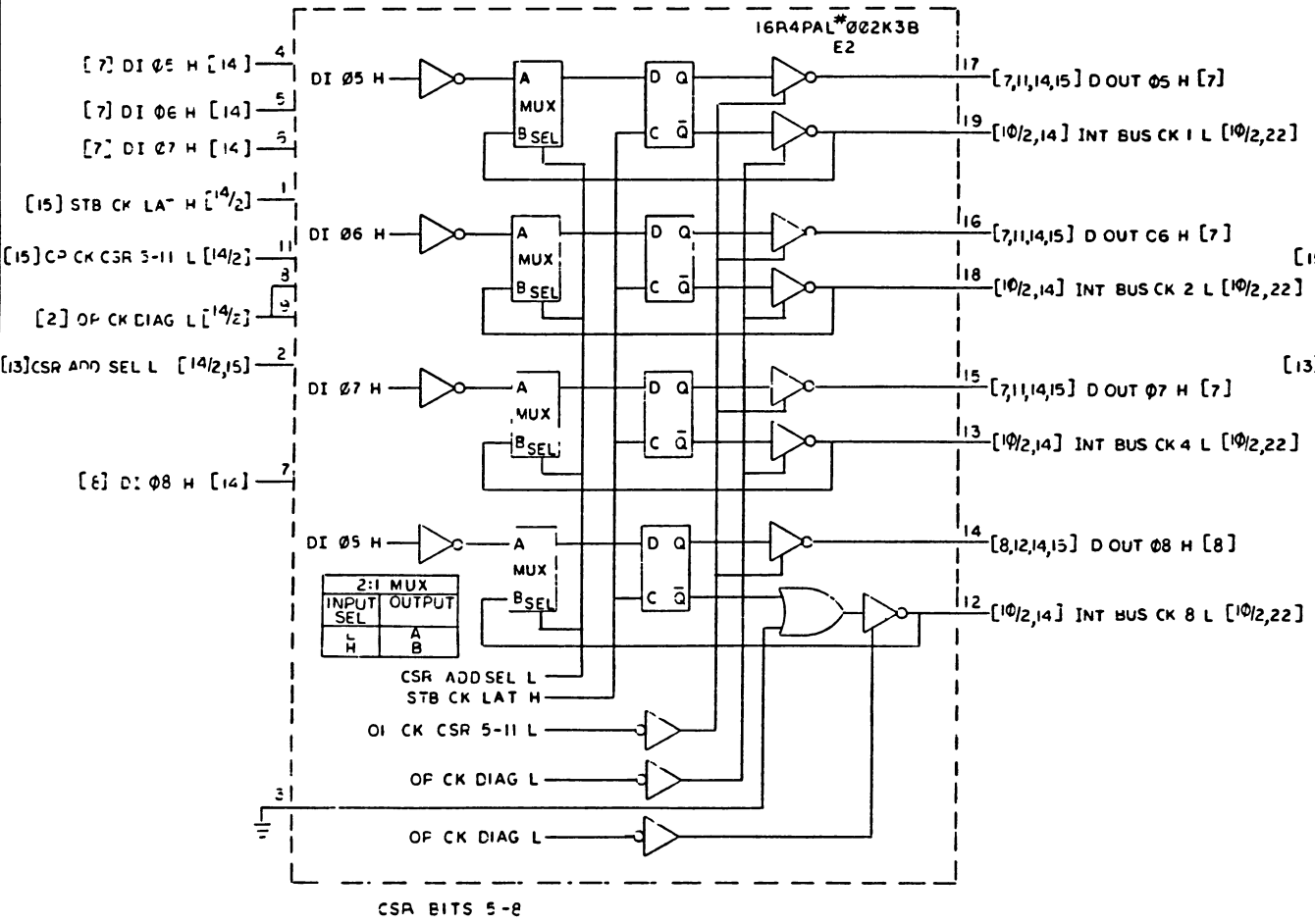
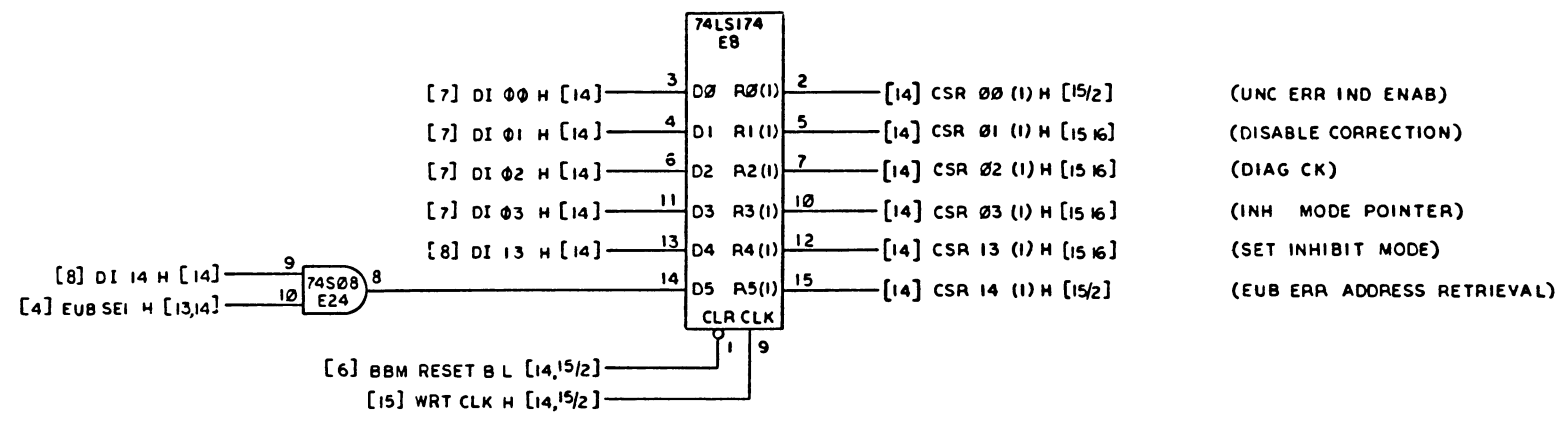
(CSR ADDRESS SELECTION)

REV	CHANGE NO	CHK

TITLE	SIZE CODE	NUMBER	REV.
ECC MOS MEMORY (MSIIM)	D CS	M8722-0-1	D
SCALE	SHEET 13 OF 22	DIST.	

THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1976 DIGITAL EQUIPMENT CORPORATION

1-0-2228W 2



(CSR BITS 00-03,05-12,13,14)

REVISIONS		
CHK	CHANGE NO	REV

TITLE		SIZE CODE	NUMBER	REV.
ECC MOS MEMORY (MSIIM)		D CS	M8722-0-1	D
SCALE		SHEET 14	OF 22	DIST.

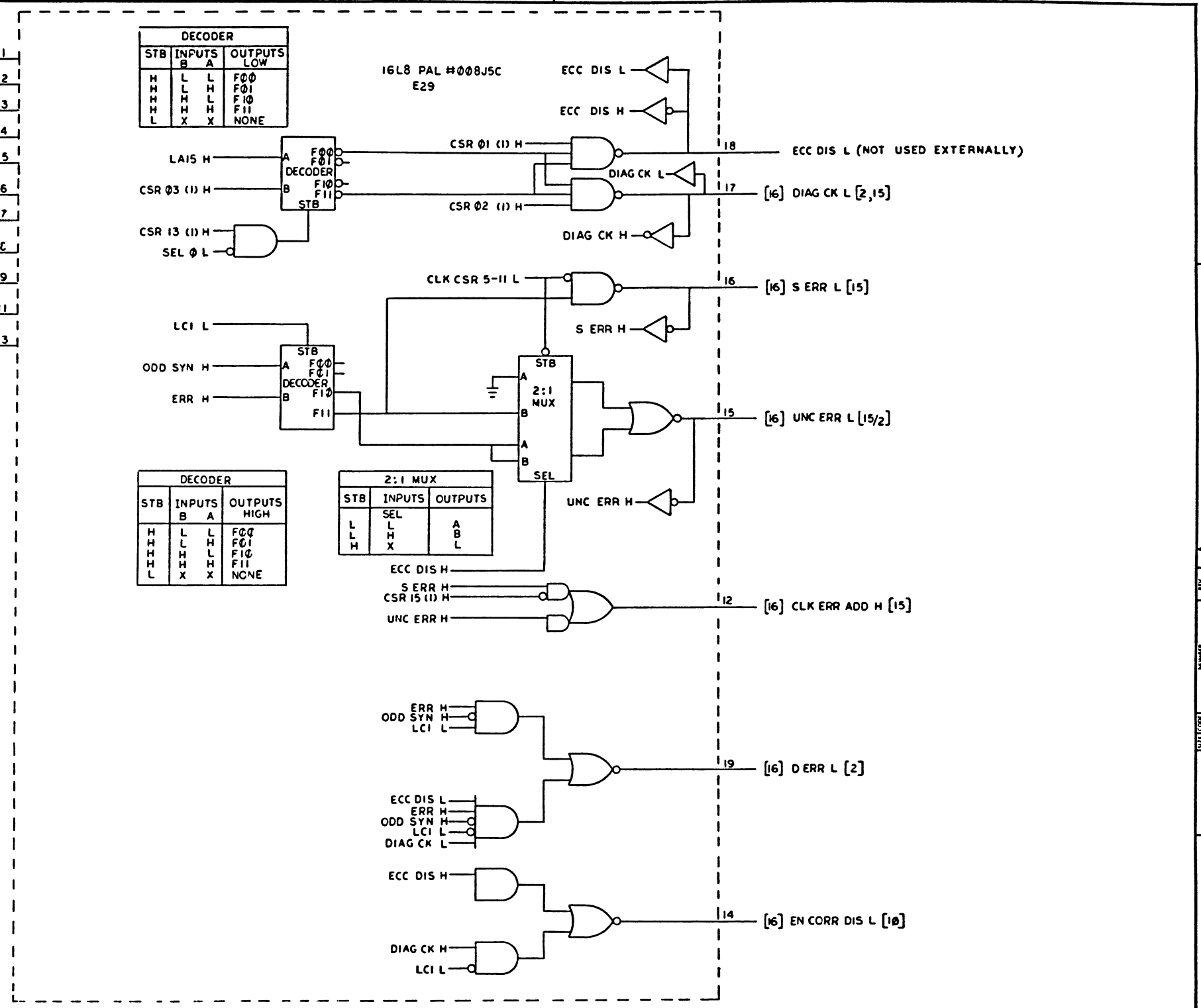
THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1980 DIGITAL EQUIPMENT CORPORATION

- [14] CSR 01 (1) H [15,16] 1
- [4] LA 15 H [6,16] 2
- [14] CSR 03 (1) H [15,16] 3
- [14] CSR 02 (1) H [15,16] 4
- [14] CSR 13 (1) H [15,16] 5
- [5] SEL 0 L [16] 6
- [10] ODD SYN H [10,16] 7
- [10] ERR H [3,16] 8
- [3] CLK CSR 5-11 L [15,16] 9
- [3] LCI L [2,5,16] 11
- [15] CSR 15 (1) H [15/2,16] 13

STB	INPUTS	OUTPUTS
	B A	LOW
H	L L	F00
H	L H	F01
H	H L	F10
H	H H	F11
L	X X	NONE

STB	INPUTS	OUTPUTS
	B A	HIGH
H	L L	F00
H	L H	F01
H	H L	F10
H	H H	F11
L	X X	NONE

STB	INPUTS	OUTPUTS
	SEL	A B
L	L	H L
H	H	X



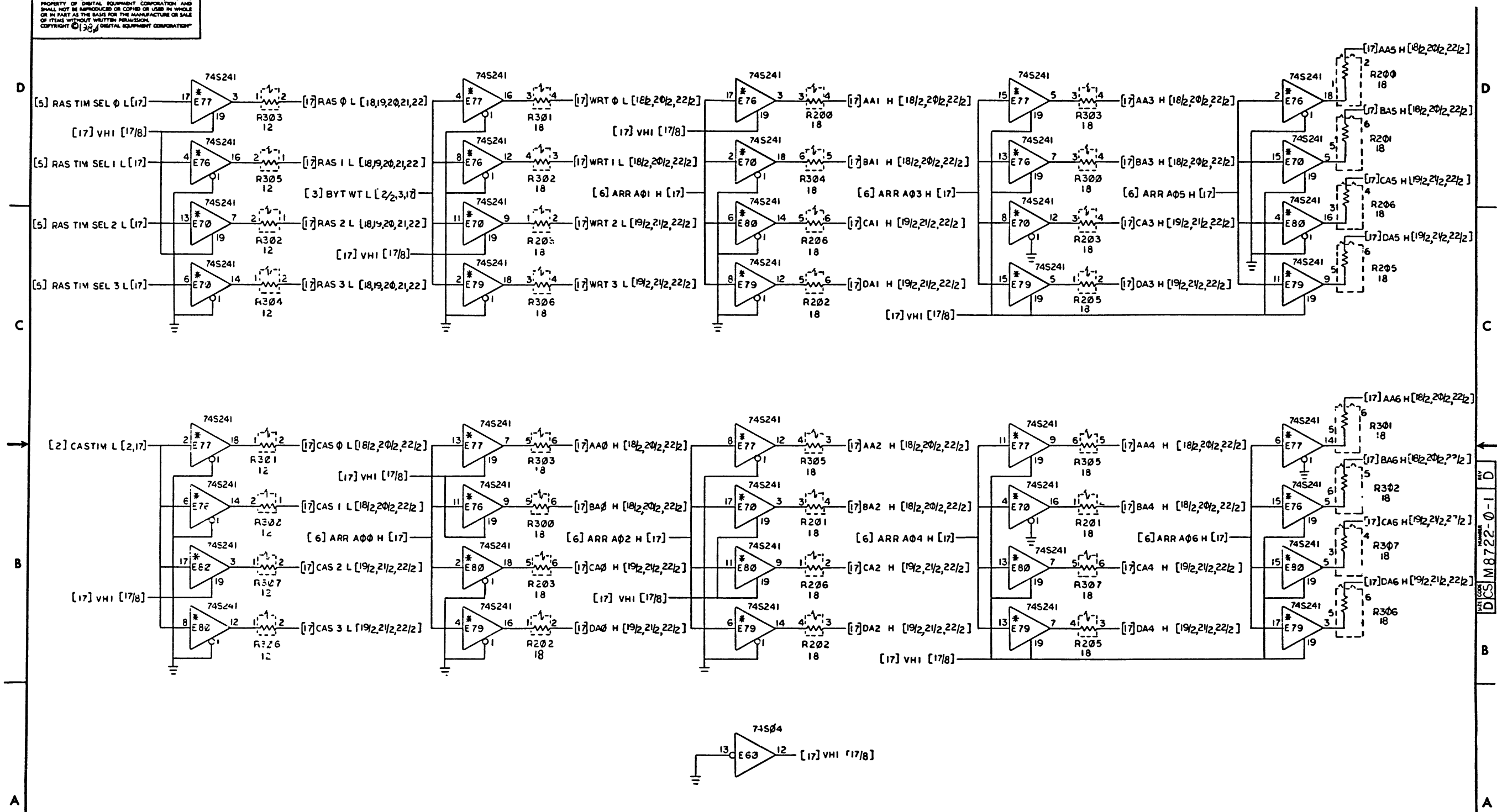
(ERROR CONTROL)

REV	CHG	NO

TITLE	ECC MOS MEMORY (MSI1M)	SIZE CODE	DCS	NUMBER	M8722-0-1	REV.	D
SCALE	1:1	SHEET	16	OF	22	DIST.	

THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1972, DIGITAL EQUIPMENT CORPORATION

DCS M8722-0-1

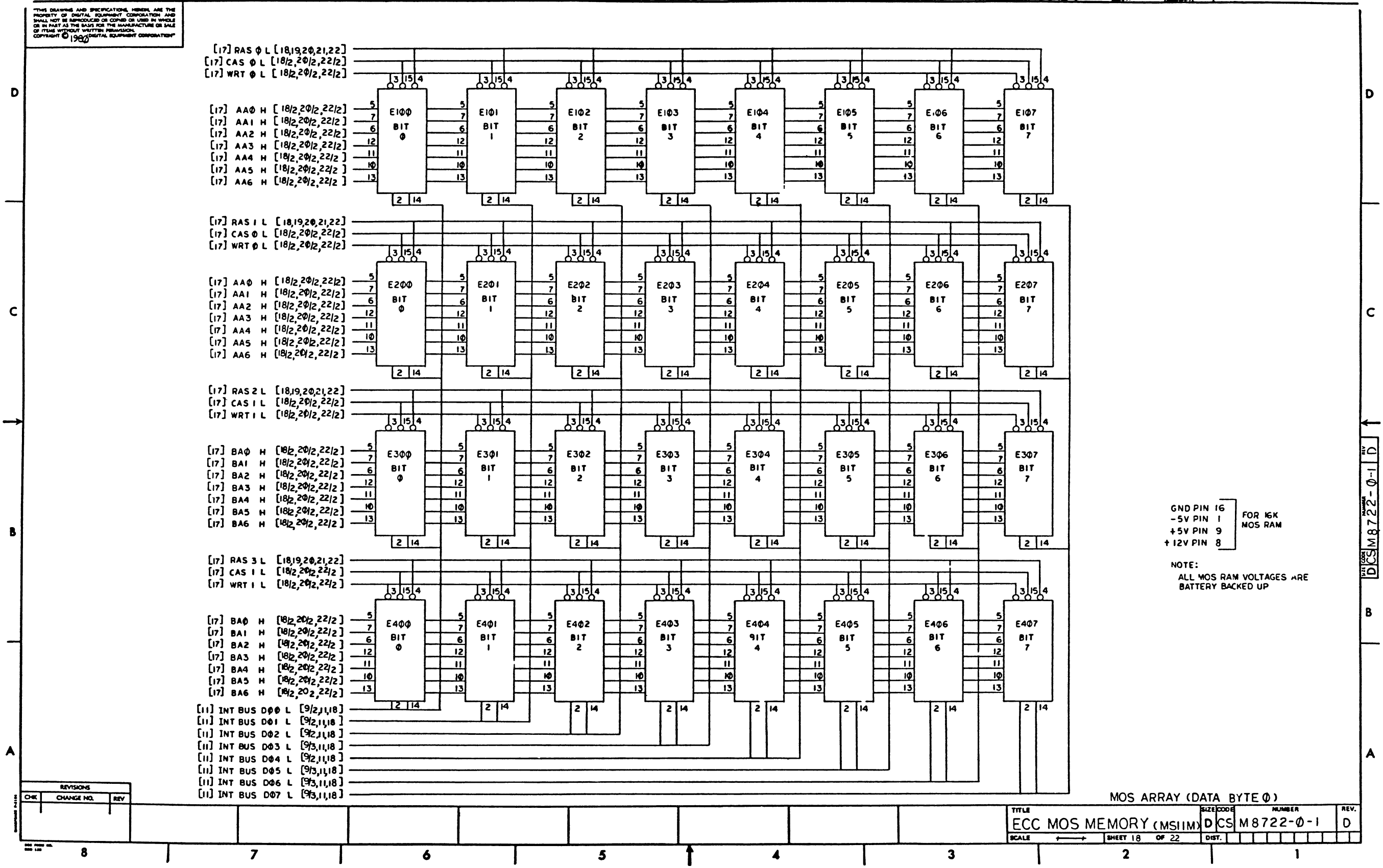


REVISIONS		
CHK	CHANGE NO.	REV

TITLE		SIZE	CODE	NUMBER	REV.
ECC MOS MEMORY (MS11M)		DCS	M8722-0-1	D	D
SCALE		SHEET 17 OF 22		DIST.	

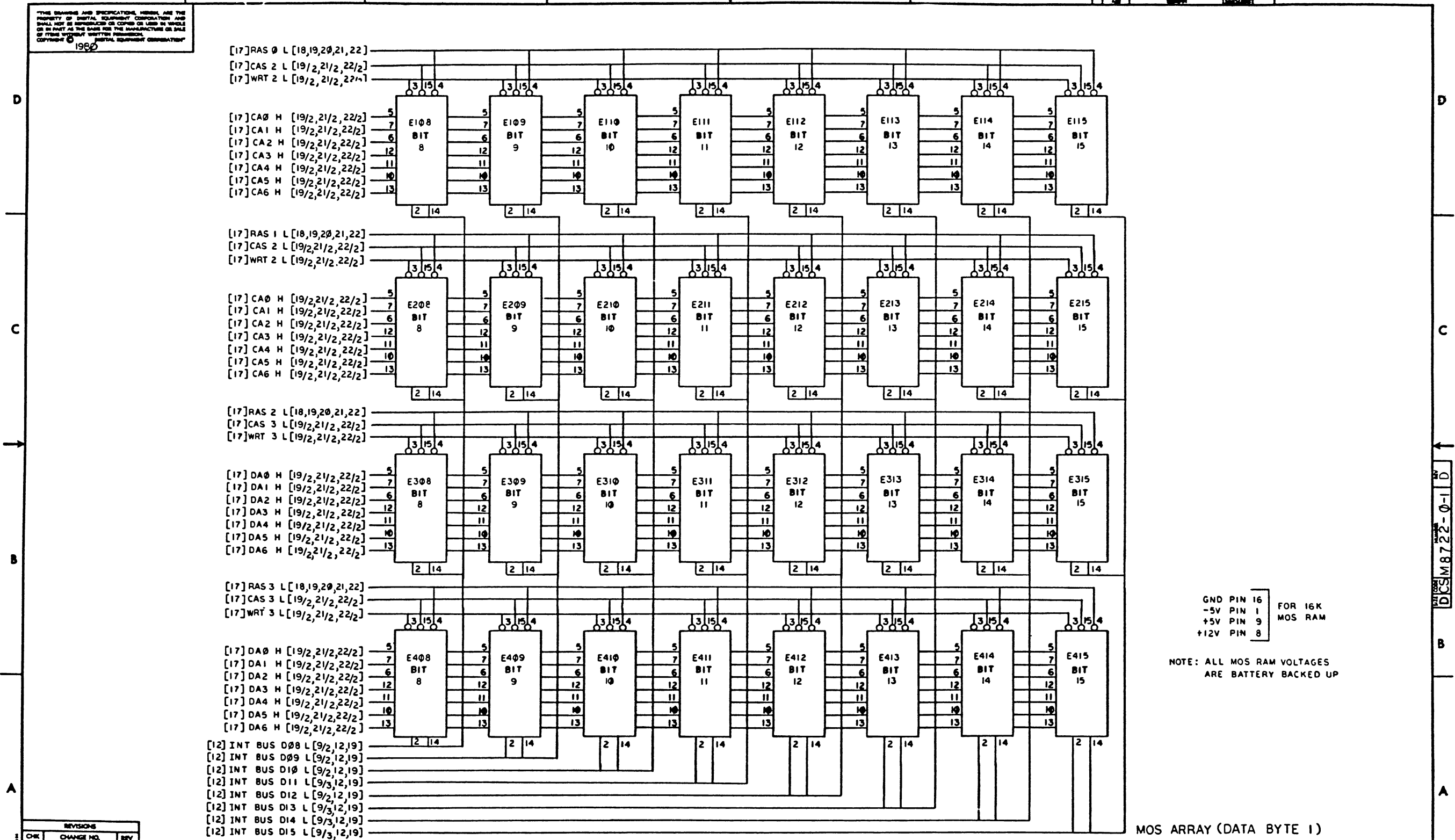
THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION.
COPYRIGHT © 1980 DIGITAL EQUIPMENT CORPORATION

1-0-2228W 2



THE DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION.
DIGITAL EQUIPMENT CORPORATION
1980

1-0-2278W SCD 2



GND PIN 16
-5V PIN 1
+5V PIN 9
+12V PIN 8

FOR 16K
MOS RAM

NOTE: ALL MOS RAM VOLTAGES
ARE BATTERY BACKED UP

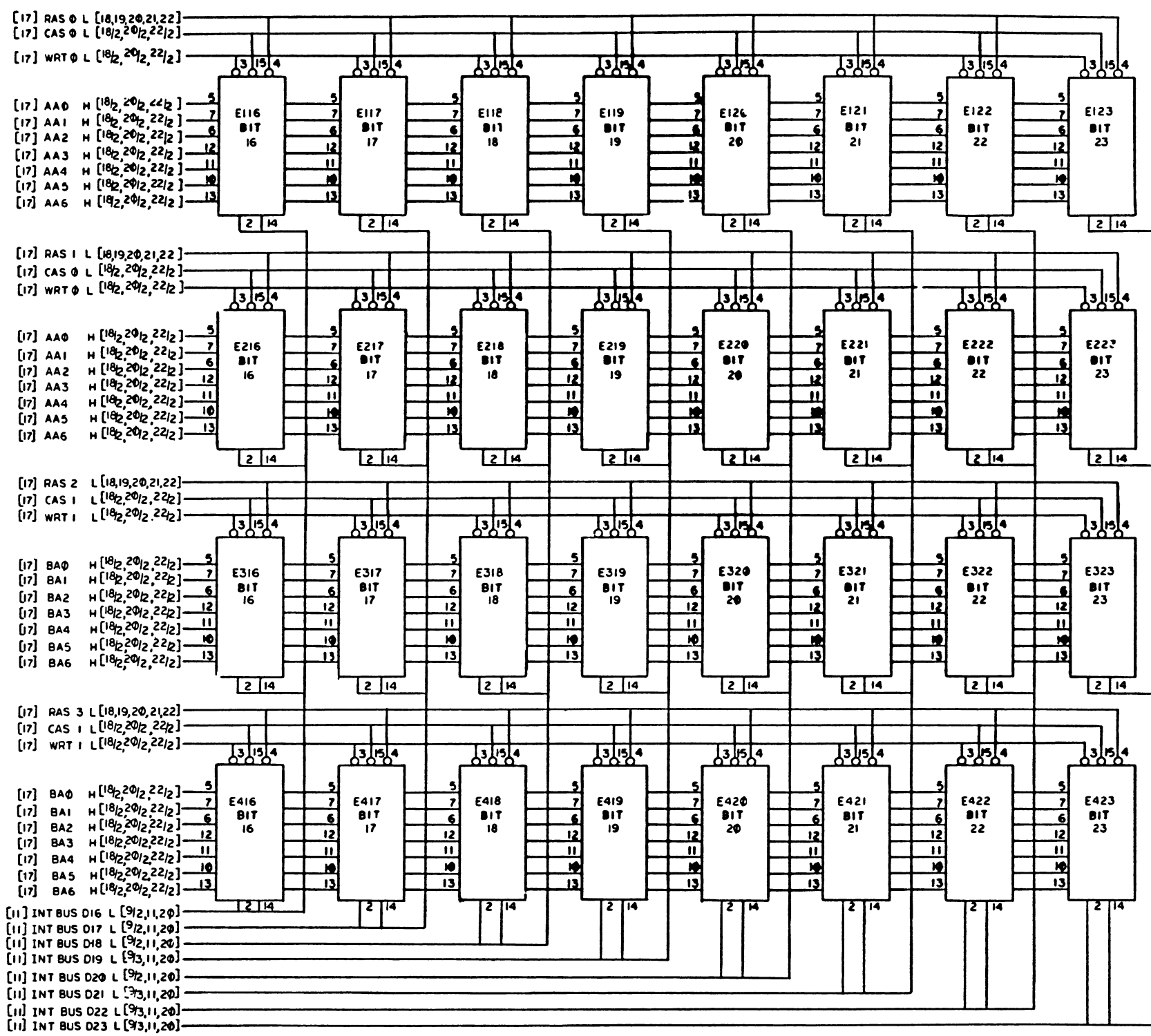
MOS ARRAY (DATA BYTE 1)

REVISIONS		
OK	CHANGE NO.	REV

TITLE		SIZE CODE	NUMBER	REV.
ECC MOS MEMORY (MSIIM)		DCS	M8722-0-1	D
SCALE		SHEET 19 OF 22		

THE DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION OF DIGITAL EQUIPMENT CORPORATION
COPYRIGHT © 1980

1-0-2228W 2



GND PIN 16
- 5V PIN 1
+ 5V PIN 9
+ 12V PIN 8

FOR 16K
MOS RAM

NOTE:
ALL MOS RAM VOLTAGES ARE BATTERY
BACKED UP

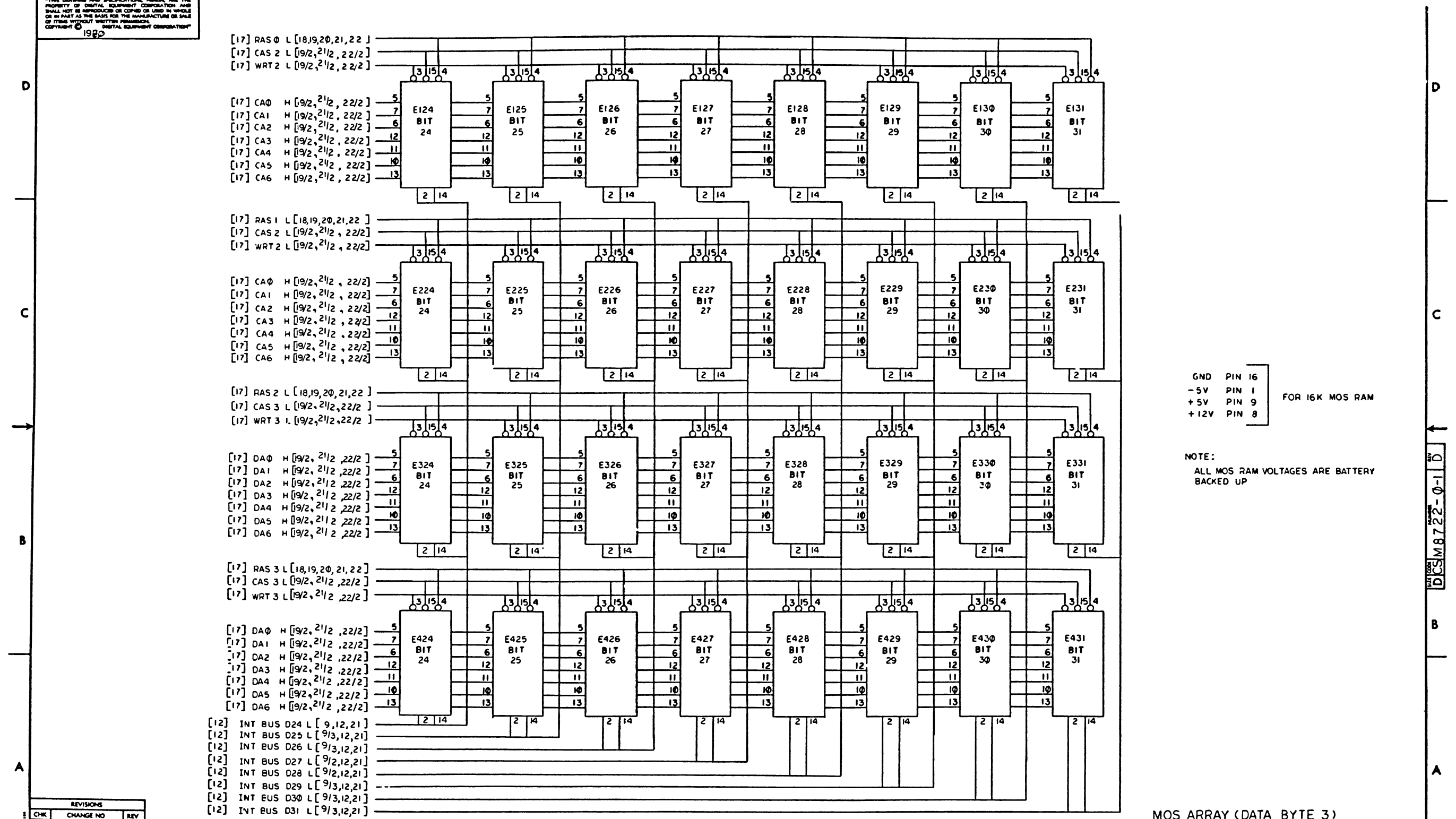
MOS ARRAY (DATA BYTE 2)

REV	CHANGE NO.	DATE

TITLE	SIZE CODE	NUMBER	REV.
ECC MOS MEMORY (MSIIM)	DCS	M8722-0-1	D
SCALE	SHEET 20	OF 22	DIST.

THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. DIGITAL EQUIPMENT CORPORATION
COPYRIGHT © 1982

1-0-2228W 2



GND PIN 16
-5V PIN 1
+5V PIN 9
+12V PIN 8

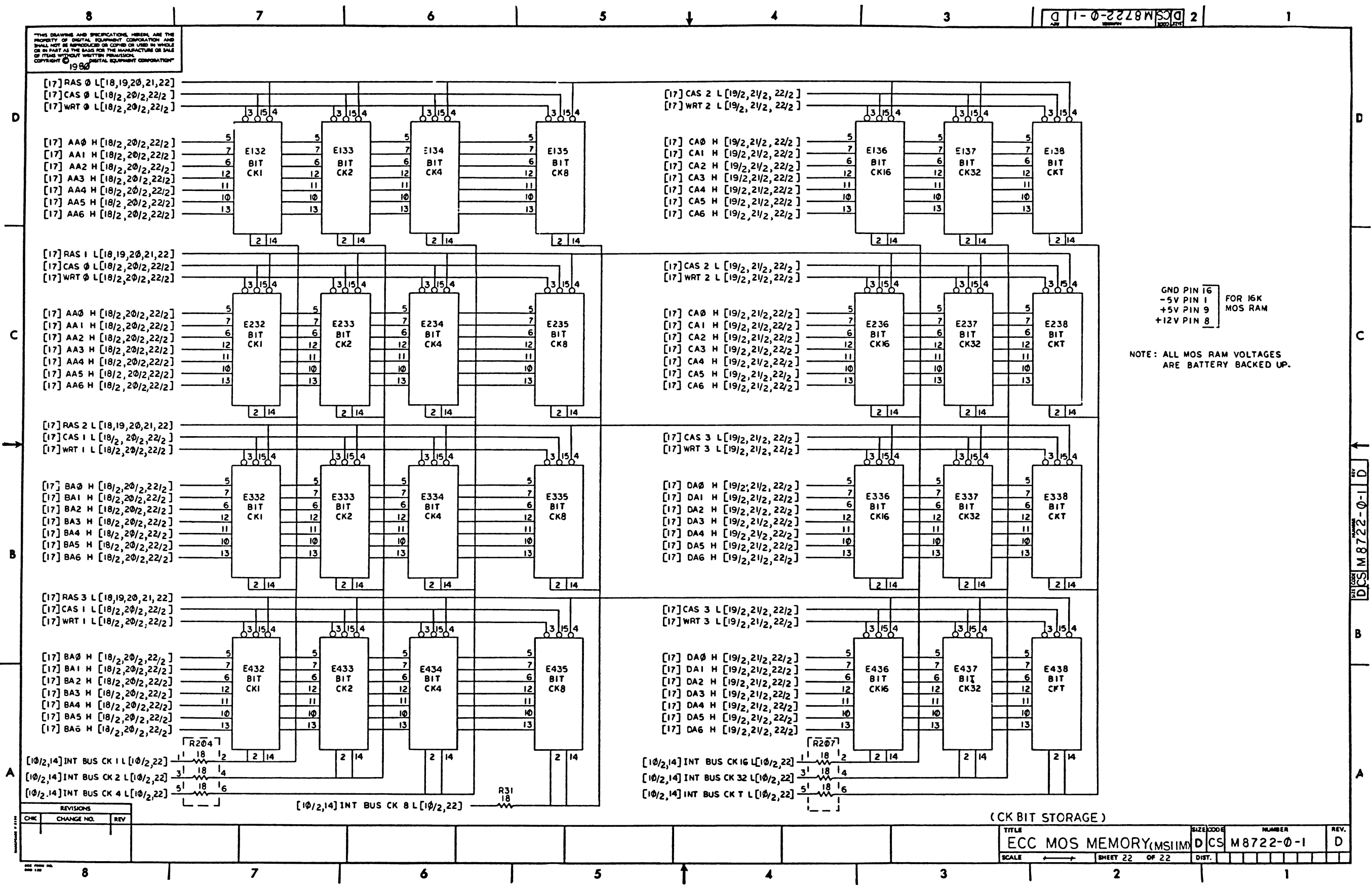
FOR 16K MOS RAM

NOTE:
ALL MOS RAM VOLTAGES ARE BATTERY
BACKED UP

MOS ARRAY (DATA BYTE 3)

REVISIONS		
CHK	CHANGE NO	REV

TITLE		SIZE CODE	NUMBER	REV.
ECC MOS MEMORY (MSIIM)		D CS	M8722-0-1	D
SCALE		SHEET 21	OF 22	DIST.



DIGITAL EQUIPMENT CORPORATION PARTS LIST				QUANTITY / VARIATION												NOTES:		
MADE BY H. DARAKJIAN DATE 28 MAR 79		CHECKED D. HEALY DATE 26 DEC 79		SECTION 1		MS11-MA	MS11-MB	MS11-MC	MS11-MD									
ENG <i>John B. Nulton</i> DATE 1-15-80		PROD <i>Bob Schaaf</i> DATE 1-15-80		ISSUED SECTION 1														
ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION															REF DESIGNATION
1	B-TC-MS11-M-1	MP00742	PRINT SET MS11-M	1	1	1	1											
2		EK-MS11M-UG	MS11-M ECC MOS MEMORY USERS GUIDE	1	1	1	1											
3		AC-F294A-MC	MS11-M & MS11-L DIAGNOSTIC LISTING	1	1	1	1											
4		AK-F293A-MC	PAPER TAPE	1	1	1	1											
E.C.O. NO.																		
"THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT ©1979 DIGITAL EQUIPMENT CORPORATION"			TITLE MS11-M SHIPPING LIST		ASSY NO. B-DD-MS11-M		SIZE B	CODE PL	NUMBER MS11-M		REV. A							
					SHEET 1 OF 1		INSERTION PARTS LIST DATA BASE REV											

BLANK